Notice

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Warranty
Philips Medical Systems reserves the right to make changes to both this Network Configuration Guide and to the product that it describes. Product specifications are subject to change without notice.

Nothing contained within this Network Configuration Guide is intended as any offer, warranty, promise, or contractual condition, and must not be taken as such.

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Compliance
The Philips Medical Systems PageWriter TC70, TC50, TC30, and TC20 cardiographs comply with all relevant international and national standards and laws. Information on compliance will be supplied on request by a local Philips Medical Systems representative, or by the manufacturer.

Intended Use of this Network Configuration Guide
This Philips product is intended to be operated only in accordance with the safety procedures and operating instructions provided in this Network Configuration Guide, and in accordance with the purposes for which it was designed. Installation, use, and operation of this product is subject to the laws in effect in the jurisdiction(s) in which the product is being used. Users must only install, use, and operate this product in such a manner that does not conflict with applicable laws or regulations that have the force of law. Use of this product for purposes other than the express intended purpose provided by the manufacturer, or incorrect use and operation, may relieve the manufacturer (or agent) from all or some responsibility for resultant non-compliance, damage, or injury.

United States federal law restricts this device to use by or on the order of a physician. THIS PRODUCT IS NOT INTENDED FOR HOME USE.

Training
Users of this product must receive adequate clinical training on its safe and effective use before attempting to operate the product as described in this Network Configuration Guide.

Training requirements vary by country. Users must ensure that they receive adequate clinical training in accordance with local laws or regulations.

For further information on available training on the use of this product, please contact a Philips Medical Systems representative, or the manufacturer.

Medical Device Directive
The PageWriter TC70, TC50, TC30, and TC20 cardiographs comply with the requirements of the Medical Device Directive 93/42/EEC and carries the CEE0123 mark accordingly.

Authorized EU-representative:
Philips Medizin Systeme
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Hewlett Packard Str. 2
71034 Böblingen
Germany
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About the Network Configuration Guide

This guide is intended to assist with configuring network or modem connectivity between Philips PageWriter TC cardiographs and external order and ECG management systems.

Before attempting to operate the products described in this document, read this guide, and the applicable PageWriter TC Cardiograph Instructions for Use. Note and strictly observe all Warning and Cautions as described in this document, and in the PageWriter TC Cardiograph Instructions for Use.

Pay special attention to all warning and caution statements included in this document.

**WARNING** Warning statements describe conditions or actions that may result in a potentially serious outcome, adverse event, or a safety hazard. Failure to follow a Warning may result in death or serious injury to the user or to the patient.

**CAUTION** Caution statements describe when special care is necessary for the safe and effective use of the product. Failure to follow a caution may result in minor to moderate personal injury or damage to the product or other property, a remote risk of more serious injury, or may cause environmental pollution.

**NOTE** Notes contain additional important information about a topic.

**TIP** A Tip contains suggested information on using a particular feature.

Menu items and button names appear in bold no-serif font. Example: Touch the **Setup** button.
Overview of Workflow Options

The PageWriter TC cardiographs can communicate over a wireless LAN, Ethernet LAN, or modem with a Philips TraceMaster ECG Management System for an integrated order and ECG management workflow solution. The cardiographs can also directly communicate with non-Philips systems, including hospital and departmental systems.

Enabling cardiograph connectivity with a TraceMaster server allows for the direct downloading of pending patient orders to the cardiograph, and for the subsequent uploading back to TraceMaster of the completed orders and associated ECGs for reconciliation, review, and processing. With TraceMaster, you can also enable the Last ECG and interactive query features on the cardiograph so that you can download ECGs directly from a TraceMaster server, allowing for the on-screen review, printing, and comparison of the most recent patient ECG directly at the cardiograph.

The cardiograph can also be configured to transmit completed ECGs to any third party (non-Philips) ECG management system via LAN, modem, or fax, as well as transmission of completed ECGs as a PDF file directly to any remote networked PC.

With the ECG Gateway option, the patient’s most recent demographic and orders information can be downloaded to the cardiograph even if you do not have a TraceMaster system installed. ECG Gateway communicates with patient registration and order entry systems to provide the most current patient and orders information directly to your site’s cardiographs.

For more information on purchasing any of the optional cardiograph features described in this document (LAN, wireless LAN, modem/fax, orders, ADT update), consult your Philips sales representative, or your local dealer or distributor.

The following sections provide an overview of the supported ECG, order, fax, and PDF workflow solutions available on the cardiograph, with references to the applicable configuration instructions.

TraceMaster with OrderVue Workflow

The cardiograph can be configured to communicate with a TraceMaster ECG Management System over a LAN, wireless LAN, or modem connection for a comprehensive bidirectional orders, and ECG workflow management solution. In this workflow option, the TraceMaster ECG Management System server receives orders and, as an option, ADT patient demographic updates to existing orders, directly from a HIS in HL7 format. The system then converts the order into an XML-based order format compatible with the PageWriter TC cardiograph.
Orders are then selected from the cardiograph Worklist at the beginning of each patient session. Completed ECGs are then transferred back to the TraceMaster server for review and reconciliation, with billing information transferred directly back to the HIS. For information on configuring connectivity with a TraceMaster ECG Management System with the OrderVue order handling option, see “Configuring TraceMaster ECG Management System Settings” on page 3-1.

**NOTE** The ADT option available with OrderVue only provides for ADT updates to an existing HL7 patient order received from the HIS.

**Figure 1-1 TraceMaster with OrderVue Workflow**
Cardiograph with ECG Gateway Workflow

ECG Gateway is available as an option with PageWriter TC cardiographs.

Orders and ADT information can be downloaded from your HIS/EMR to worklists on individual cardiographs. Technicians use these worklists to fulfill orders, update patient information, and manage use of the cardiograph.

When an order is entered into your site’s HIS/EMR, it is associated with a specific ECG location code. Within ECG Gateway, this location code is mapped to an outbox, which you can think of as a storage container that allows the system to organize messages by location or group.

Multiple location codes can be mapped to a single outbox. For example, the night shift might have responsibility for all orders originating on the 2nd and 3rd floors of your facility for a given day. Departments A, B, and C could have their orders all mapped to the outbox, Floor2-3.

On the cardiograph, a worklist is configured by selecting one or more outboxes from which to download records. Each cardiograph can have one or more worklists configured. You access the worklist records on the Worklist screen, where you select the worklist to work with, download records, and select each entry to process.

For additional information, refer to the Using PageWriter TC Cardiographs with ECG Gateway Guide, as well as the ECG Gateway Configuration and Reference Guide, provided with the ECG Gateway option. Contact your Philips technical representative for details.

ECG PDF Export and Remote PC Workflow

The cardiograph can be configured to export ECGs as PDF files to any networked remote PC or server using a LAN, or wireless LAN connection. The ECG PDF files may then be viewed in PDF viewer software directly at the remote receiving PC or server. The remote PC or server can also be configured to support the receipt of custom configuration files, or System Log files from the cardiograph, and the remote server can transmit custom configuration files or software update files directly to a cardiographs, accelerating the configuration and software update processes. For more information on configuring PDF Export or Remote PC settings, see “Configuring PDF Export and Remote PC Settings,” on page 5-1.

NOTE The ECG PDF Export and Remote PC workflow does not support the use of modem transmission.
ECG Fax Workflow

The cardiograph can be configured to fax completed ECGs to any remote receiving fax machine using the optional modem. For more information on configuring the cardiograph modem to fax ECGs, see “Configuring FAX Settings” on page 7-1.

Special Notes About Fax Transmission

**CAUTIONS**
- No guarantee is made as to the suitability of a faxed ECG for any particular purpose, due to the variability inherent in fax technology.
- Faxed ECGs should only be sent to secure recipient fax machines.
Figure 1-3  ECG Fax Transmission Workflow
Third-Party ECG Management System Workflow

The cardiograph can be configured to transmit completed ECGs in a specified Philips XML format to any remote receiving server using a modem, LAN, or wireless LAN connection. For information on the Philips ECG XML Schema, see “Philips ECG XML Information” on page 1-10. For information on configuring cardiograph connectivity with a third party (non-Philips) ECG management system, see “Configuring Third Party ECG Management System Settings” on page 6-1.

Figure 1-4  PageWriter TC Cardiograph to Third Party (non-Philips) ECG Management System Transmission Workflow
Using the Cardiograph Setup Screens

All cardiograph networking and remote server settings, including TraceMaster or third party ECG management system settings, are accessed through the Configuration Setup and Service Utilities Menu. This menu is organized as described in Table 1-1.

To access configuration screens

1 Touch Setup on the toolbar (bottom of screen) to open the menu, and then touch a button to make a selection from the menu.

   Each menu selection is organized into a series of buttons and tabs that appear at the top of the screen.

2 Touch a button or tab to select it. A selected button or tab appears highlighted in blue.

Table 1-1 Configuration Setup and Service Utilites Main Menu Options

<table>
<thead>
<tr>
<th>Menu Selection</th>
<th>Features</th>
<th>For details, see ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure Cardiograph</td>
<td>Exams, Patient ID, Algorithm/Pacing, Institution, Maintenance Test, Password, Filter, Locale, System, Save/Load</td>
<td>Use the Help system on the Setup screens for assistance in specifying these clinical default settings. For information on using the Help system, see “Using Setup Help” on page 1-11.</td>
</tr>
<tr>
<td>Default Settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure ECG Network</td>
<td><strong>Wire Network</strong></td>
<td>“Configuring Wired LAN (Ethernet) Settings” on page 2-6.</td>
</tr>
<tr>
<td>Network Settings, LAN/WLAN</td>
<td>Use this tab to define Ethernet connection and modem (available as an option) settings for the cardiograph.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Wireless Network</strong> (available as an option)</td>
<td>“Configuring the Wireless LAN Settings” on page 2-7.</td>
</tr>
<tr>
<td></td>
<td>Use this tab to define wireless connection settings for the cardiograph.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 1-1  Configuration Setup and Service Utilites Main Menu Options (continued)

<table>
<thead>
<tr>
<th>Menu Selection</th>
<th>Features</th>
<th>For details, see ...</th>
</tr>
</thead>
</table>
| **Configure ECG Network Settings, ECG Mgmt Systems** | **Create TraceMaster Connection**  
- Use this tab to configure a new TraceMaster, or third party (non-Philips) server connection, including compression and encryption options.  
- Use this tab to configure a connection to a PC for export of PDF format ECG reports  
- Use this tab to configure a remote PC connection to transfer log and custom configuration files, as well as software updates. |  
- “Configuring a TraceMaster Connection” on page 3-9.  
- “Configuring Third Party ECG Management System Settings” on page 6-1.  
- “Configuring PDF Export and Remote PC Settings” on page 5-1. |
| **Edit/Delete TraceMaster Connection** |  
- Use this tab to change or to delete existing TraceMaster, third party, or PDF export server settings, specify a default server connection, enable Time Sync feature, or to manually change the date and time. | |
| **OrderVue Settings** | **Create OrderVue Inbox**  
- Use this tab to create new worklists for direct order or patient demographic download to the cardiograph. | “Configuring OrderVue Settings” on page 4-1. |
| **Edit/Delete OrderVue Inbox** |  
- Use this tab to change or to delete an existing Worklist. | |
### Table 1-1  Configuration Setup and Service Utilities Main Menu Options (continued)

<table>
<thead>
<tr>
<th>Menu Selection</th>
<th>Features</th>
<th>For details, see ...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configure ECG Network Settings, ECG Mgmt Systems</strong></td>
<td><strong>ADT Settings</strong>&lt;br&gt;<strong>Create ADT Inbox</strong></td>
<td>“Configuring OrderVue Settings” on page 4-1.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTES</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This feature is not supported on PageWriter TC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cardiographs with installed software version</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A.04.04 and lower.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This ADT option is not used with OrderVue with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the ADT option installed. If using OrderVue with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the ADT option, you configure an OrderVue</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(not ADT) Worklist.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>On PageWriter TC cardiographs only.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>These settings are not available if you have</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the ECG Gateway option installed. With ECG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gateway, you do not need to configure separate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADT settings. For details, refer to the ECG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gateway documentation.</td>
<td></td>
</tr>
<tr>
<td><strong>Configure ECG Network Settings, FAX</strong></td>
<td><strong>NOTE</strong>  Fax is only available with the optional</td>
<td>“Configuring FAX Settings” on page 7-1.</td>
</tr>
<tr>
<td></td>
<td><strong>Fax</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Create a Fax Recipient</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Use this tab to create a new fax recipient,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>including recipient name, number, and a fax</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cover sheet.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Edit/Delete Fax Recipient</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Use this tab to change or to delete an existing fax entry.</td>
<td></td>
</tr>
<tr>
<td><strong>Service Utilities</strong></td>
<td>Provides an overview of all cardiograph</td>
<td>PageWriter TC Cardiograph Service Manual, available for download from the Philips InCenter site.</td>
</tr>
<tr>
<td></td>
<td>operating information, and includes a set of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>diagnostic tests and utilities that can be used</td>
<td></td>
</tr>
<tr>
<td></td>
<td>for troubleshooting purposes. Displays system error and event log in real time for immediate review.</td>
<td></td>
</tr>
</tbody>
</table>
Philips ECG XML Information

The PageWriter TC cardiographs export ECG data in XML (Extensible Markup Language) format. Several XML schema versions are available on the cardiograph: version 1.03, version 1.04, and version 1.04.01. Version 1.03 exports ECG data in 12-lead format only, version 1.04 exports ECG data for up to 16 leads, and versions 1.04.01 and 1.04.02 export ECG data for up to 16 leads (on supported cardiographs) and include full interpretation from the Philips DXL Algorithm.

For information about the Philips ECG XML schema, see the Data Dictionary and XML Schema Reference, available under the TraceMasterVue product line in InCenter.

Using the Philips InCenter Site

The Philips InCenter site provides frequent updates to product documentation and product software, including the PageWriter TC cardiographs.

The Philips InCenter site requires an active registration and password. To register, go to the InCenter site at: incenter.medical.philips.com and click on the Need help? link on the main page (located under the user login and password fields). On the following page, under Software Updates (lower right corner of page), click the Click here for account registration link. The Cardiac Systems InCenter Registration page appears. Complete all of the information fields on the page to receive a login and password for the InCenter site.

Registration for the InCenter site requires the serial number of at least one PageWriter TC cardiograph in active use at your facility. The serial number is found on the product identification label, located next to the text SN. The product identification label is located on the rear panel of the cardiograph, see Figure 1-5 on page 1-10.

Figure 1-5   Cardiograph Product Identification Label (rear view)
About Adobe Acrobat Versions

Adobe Acrobat Reader version 9.0 must be installed on the PC that is used to access the Philips InCenter site. Previous versions of Acrobat Reader are not compatible with the Philips InCenter site, and attempting to access InCenter with a previous version of Acrobat Reader will result in error messages when opening documents. Uninstall all previous versions of Acrobat Reader, and then proceed for a free install of Acrobat Reader 9.0 at: www.adobe.com.

Any version of Adobe Acrobat Professional or Acrobat Elements are also not compatible with the Philips InCenter site, and error messages will appear when opening documents with these applications. Acrobat Reader 9.0 must be installed in addition to Acrobat Professional or Acrobat Elements.

Follow this procedure when accessing documents on the Philips InCenter site.

To access documents on the Philips InCenter site:

1. Exit Acrobat Professional or Acrobat Elements (if open).
2. Start Acrobat Reader 9.0.
3. Open Internet Explorer, and go to the Philips InCenter site. Keep Acrobat Reader 9.0 open the entire time while accessing the InCenter site.

Using Setup Help

Each Setup screen within the cardiograph software application provides Help that describes the currently selected option or field. Use the Help when configuring cardiograph settings, or to learn more about a specific feature or item.

When a Setup screen is opened, Help displays in a blue Information box that appears on the bottom of the screen. Touch a tab, or touch the name of any field or option displayed on the screen to display Help for that specific item.

To view help for a tab or field:

- Touch a tab or touch the name of the field or option so that it is highlighted in blue. Help for the selected item displays in the blue Information box at the bottom of the screen (see Figure 1-6 and Figure 1-7 on page 1-12).
Figure 1-6 PageWriter TC70 or TC50 Cardiograph Information Box on a Setup screen

Figure 1-7 PageWriter TC30/TC20 Cardiograph Information Box on a Setup screen

A Information Box
Contacting a Philips Response Center

The Philips Response Center can assist with product troubleshooting and provide technical expertise to help with any issue with the PageWriter TC cardiographs or any of its accessories.

For more information on the Philips Response Center go to:

www.medical.philips.com/main/services/response_center

**North America Response Centers**

<table>
<thead>
<tr>
<th>Country</th>
<th>Telephone Number</th>
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</thead>
<tbody>
<tr>
<td>Canada</td>
<td>(800) 323 2280</td>
</tr>
<tr>
<td>Mexico</td>
<td>01 800 710 8128</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>1 787 754 6811</td>
</tr>
<tr>
<td>United States</td>
<td>(800) 722 9377</td>
</tr>
</tbody>
</table>

**South America Response Centers**

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<thead>
<tr>
<th>Country</th>
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<tbody>
<tr>
<td>Argentina</td>
<td>54 11 4546 7698</td>
</tr>
<tr>
<td>Brazil</td>
<td>0800 701 7789</td>
</tr>
<tr>
<td>Chile</td>
<td>0800 22 3003</td>
</tr>
<tr>
<td>Columbia</td>
<td>01 8000 11 10 10</td>
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<tr>
<td>Peru</td>
<td>51 1 620 6440</td>
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**Europe Response Centers**

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<tr>
<td>United Kingdom</td>
<td>44 0870 532 9741</td>
</tr>
<tr>
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<td>Fax: 44 01737 23 0550</td>
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## Europe Response Centers

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<td>Austria</td>
<td>43 1 60101 820</td>
</tr>
<tr>
<td>Belgium</td>
<td>32 2 525 7102 (French)</td>
</tr>
<tr>
<td></td>
<td>32 2 525 7103 (Flemish)</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>31 40 2781619</td>
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<tr>
<td>MCR Response Center (located in The Netherlands)</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>45 80 30 30 35</td>
</tr>
<tr>
<td>Finland</td>
<td>358 615 80 400</td>
</tr>
<tr>
<td>France</td>
<td>0 810 835 624</td>
</tr>
<tr>
<td>Germany</td>
<td>0180 5 47 5000</td>
</tr>
<tr>
<td>Greece</td>
<td>31 40 2781619</td>
</tr>
<tr>
<td>MCR Response Center (located in The Netherlands)</td>
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<tr>
<td>Hungary</td>
<td>31 40 2781619</td>
</tr>
<tr>
<td>MCR Response Center (located in The Netherlands)</td>
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</tr>
<tr>
<td>Italy</td>
<td>0800 232100</td>
</tr>
<tr>
<td>Netherlands</td>
<td>31 40 27 211 27</td>
</tr>
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<td>Norway</td>
<td>47 800 84 080</td>
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<tr>
<td>MCR Response Center</td>
<td>(located in The Netherlands)</td>
</tr>
<tr>
<td>Spain</td>
<td>34 90 230 4050</td>
</tr>
<tr>
<td>Sweden</td>
<td>46 200 81 00 10</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0800 80 3000 (German)</td>
</tr>
<tr>
<td></td>
<td>0800 80 3001 (French)</td>
</tr>
</tbody>
</table>

### Asia Response Centers

<table>
<thead>
<tr>
<th>Country</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1800 251 400</td>
</tr>
<tr>
<td>China</td>
<td>800 810 0038</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>852 2876 7578</td>
</tr>
<tr>
<td>India</td>
<td>1600 112 444</td>
</tr>
<tr>
<td>Indonesia</td>
<td>62 21 7910040, ext 8610</td>
</tr>
<tr>
<td>Japan</td>
<td>81 (0)120 095 205</td>
</tr>
</tbody>
</table>
## Asia Response Centers

<table>
<thead>
<tr>
<th>Country</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>82 (0)2 3445 9010</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1800 886 188</td>
</tr>
<tr>
<td>New Zealand</td>
<td>0800 251 400</td>
</tr>
<tr>
<td>Philippines</td>
<td>63 2 8162617 ext. 875</td>
</tr>
<tr>
<td>Singapore</td>
<td>1800 Philips</td>
</tr>
<tr>
<td>Taiwan</td>
<td>0800 005 616</td>
</tr>
<tr>
<td>Thailand</td>
<td>66 (0)2 614 3569</td>
</tr>
</tbody>
</table>

## Africa and Middle East

<table>
<thead>
<tr>
<th>Country</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All countries</td>
<td>31 40 2781619</td>
</tr>
<tr>
<td>MCR Response Center</td>
<td></td>
</tr>
<tr>
<td>(located in The Netherlands)</td>
<td></td>
</tr>
</tbody>
</table>
Configuring Network Connectivity

The PageWriter TC cardiographs communicate with various external servers using a wired or wireless network connection, or a modem connection. In the network configuration settings available on the cardiograph, all TCP/IP settings can be specified based on the needs of your specific clinical environment.

Configuration Overview

Both automatic IP addressing via DHCP (Dynamic Host Configuration Protocol) and fixed IP address settings are available. The network settings on the cardiograph support TCP/IP protocol using a dynamic IP address or a static IP address, and support a DNS or WINS server.

Ethernet data transmission settings can be set to Auto Negotiation, where the system automatically configures the correct settings for Ethernet speed and mode (half or full duplex), or can be configured with fixed settings, if required.

Network Connection Status Window

Tap the LAN icon or the wireless LAN icon on the Status Bar (top of screen) to view more detailed information about a connection. The Network Connection Status window appears.

Touch Refresh to display the most current network connection information.
About the Refresh Button

Touching the Refresh button, available on the Network Connection Status window or on the Wire Network (LAN) or Wireless Network Setup screens, obtains and displays the most recently acquired IP address for the cardiograph.

Note that this button does not provide a release and renew feature to acquire a new IP address for the cardiograph. To get a new IP address for the cardiograph, you must shut down and restart the cardiograph as described in the following procedure.

Getting a New IP Address for the Cardiograph

To get a new IP address for the cardiograph:

1. Ensure that any active patient data or ECG data has been saved.  
   Note: When the cardiograph is shut down, any unsaved patient or ECG data is deleted.

2. Press and hold the On/Standby button on the cardiograph for two seconds. The cardiograph shuts down.

3. Press the On/Standby button again to restart the cardiograph.

4. From the Main screen, touch Setup on the tool bar. The Setup main menu appears.

5. On the menu, touch Configure ECG Network Settings.  
   The Wire Network tab is displayed.
   To view the IP address set for a wireless connection, touch the Wireless Network tab.

6. To get a new IP address, touch Refresh next to the Device Address field.  
   The field is updated with the new IP address.

Obtaining the IP Address Automatically (Using DHCP)

To get an IP address automatically:

- On either the Wire Network or Wireless Network tab, touch Obtain IP Address Automatically to dynamically retrieve an IP address from the network.

   The LAN records the unique MAC (Media Access Control) address of the cardiograph and provides a temporary DHCP IP address. The IP address is obtained each time the cardiograph is restarted, or is returned to active use after being shut down.

About Auto Negotiation

When obtaining the IP address from the local area network (LAN) dynamically using DHCP, you can specify the Ethernet adapter settings. The settings are set to Auto Negotiation, where the system automatically configures the correct settings for Ethernet speed and mode (half or full duplex).
NOTE If Auto-Negotiation fails, you may need to lock a specific switch or router port to a fixed setting (for example, 100BaseT Full Duplex) to obtain a connection. For details, see “Configuring Manual Ethernet Settings” on page 2-6.

Specifying IP Address (Fixed IP)

To specify a fixed IP address:

- On either the Wire Network or Wireless Network tab, touch Specify IP Address to define a fixed IP address for the cardiograph.

Using a fixed IP address allows the cardiograph to be recognized from multiple locations while connected to the LAN, and does not require that the IP be reset to be recognized. Using fixed IP addresses also avoids the problem of having multiple IP addresses assigned to a single cardiograph.

Checking the Cardiograph IP Address

The Device Address field on the Network tabs displays the current IP address for the cardiograph for each connection type.

To view the IP address for the cardiograph:

1. On the Main screen, touch Setup on the tool bar. The Setup main menu appears.
2. On the menu, touch Configure ECG Network Settings.
3. Touch the desired tab for your connection: Wired Network or Wireless Network.

The IP address for the connection is displayed in the Device Address field.

For information on manually resetting the IP address, see “Getting a New IP Address for the Cardiograph” on page 2-2.

Configuring Multiple Cardiographs

When configuring multiple cardiographs with the same networking, TraceMaster, or order settings, you can save all settings to a USB memory stick as a network settings file, and upload the settings to additional PageWriter TC cardiographs.

NOTES

- Wireless LAN settings specified for the wireless LAN adapter are saved with the Network Settings file.
- You can load the same Network Settings file on all models of the PageWriter TC cardiograph.
Configuring Cardiograph Network Settings

If assistance is required with any of the settings described in this section, please consult your network administrator.

The Network settings are contained on two tabs: Wire Network and Wireless Network. You specify connection settings using the appropriate tab. The selected tab is highlighted in blue.

**TIP** The blue information box at the bottom of each screen provides help information for all settings. Touch the name of a setting to display help for that item. The selected item is highlighted in blue.

**Figure 2-2 Wire Network tab**

![Wire Network tab](image)

**Figure 2-3 Wireless Network tab**

![Wireless Network tab](image)
For details on configuring network settings, see:

- “Configuring Wired LAN (Ethernet) Settings” on page 2-5.
- “Configuring the Wireless LAN Settings” on page 2-7.

## Configuring Wired LAN (Ethernet) Settings

On the network configuration screen, you can define how the IP address is set (dynamic or fixed), specify the subnet mask, default gateway, and primary DNS, and/or primary WINS.

### To configure Wired LAN (Ethernet) settings:

1. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2. On the menu, touch **Configure ECG Network Settings**. The **Wire Network** tab appears.
3. Touch the appropriate IP Address button:
   - To use a dynamic IP address that is retrieved automatically each time the cardiograph is reset, touch **Obtain IP Address Automatically**. This settings is enabled by default. Proceed to step 4.
   - If using a static IP Address, proceed to step 5.

Depending on which selection you make, different options are enabled on the tab.

4. If using a dynamic IP address, specify the following settings:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Name</td>
<td>Touch the text field and type a unique name to identify this specific cardiograph on the network (up to sixteen letters or numbers).</td>
</tr>
</tbody>
</table>

**NOTES**

- The **Computer Name** field cannot be left blank, and can only contain the letters A-Z or the numerical digits 0-9.
- If the field is left blank, the text **PageWriter TC** is automatically filled in by default.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>The LAN automatically provides a dynamic IP address to the cardiograph. The LAN records the unique MAC address of the cardiograph and provides a temporary DHCP IP address. To manually retrieve a new IP address from the network, shut down the cardiograph (press and hold the On/Standby button ( ), then press it again to restart the cardiograph. This resets the temporary DHCP IP address.</td>
</tr>
</tbody>
</table>
The Ethernet Adapter settings are always set to **Auto Negotiation** (page 2-2).

Proceed to step **6**.

5 If using a fixed IP address, specify the following settings:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Name</td>
<td>Touch the text field and type a unique name to identify this specific cardiograph on the network (up to sixteen letters or numbers). This field is required, and cannot be left blank.</td>
</tr>
</tbody>
</table>
| NOTES              | ■ The **Computer Name** field cannot be left blank, and can only contain the letters A-Z or the numerical digits 0-9.  
                       ■ If this field is left blank, **PageWriter TC** will appear in this field by default. |
| IP Address         | Touch the first text field and type the IP address for this cardiograph. No separating period (.) is required. |
| Subnet Mask        | Optional. Touch the first entry field and type the subnet mask address. No separating period (.) is required. |
| Default Gateway    | Optional. Touch the first entry field and type the default gateway. No separating period (.) is required. |
| Primary DNS        | Optional. Touch the first entry field and type the primary DNS address. No separating period (.) is required. |
| Primary WINS       | Optional. Touch the first entry field and type the primary WINS address. No separating period (.) is required. |

6 Touch **Exit**, then touch **Yes** when prompted to save your settings.

After saving your changes, the IP address is saved in the registry. Other configuration settings are saved in the configuration file.

**Configuring Manual Ethernet Settings**

By default, the cardiograph is configured for auto-negotiation. If auto-negotiation fails, you may need to lock a specific switch or router port to a fixed setting (for example, 100BaseT Full Duplex) to obtain a connection.

You specify the settings in the Ethernet Adapter Settings section of the Wire Network or Wireless Network tabs.
To configure manual Ethernet settings:

1. On the Wire Network or Wireless Network tab, touch **Manual Settings**.
   
The buttons for each of the settings are enabled.

2. Touch the button(s) to select the appropriate settings. Options are 10 or 100 Mbps, Half or Full Duplex.

   **NOTE**  
   - **Half Duplex** means that data can be transmitted in both directions on a signal carrier, but not at the same time. **Full Duplex** means that data can be transmitted in both directions on a signal carrier, at the same time.

3. Save the settings by touching **Exit**.

4. When prompted to save your changes, touch **Yes**.
   
The cardiograph saves the settings to the registry and returns you to the Setup menu. You must now restart the cardiograph.

5. Press and hold the On/Standby button for two seconds to shut down the cardiograph.  
   Press the On/Standby button again to restart the cardiograph.

The new settings are now applied.

### Configuring the Wireless LAN Settings

The PageWriter TC cardiographs support different wireless adapters, depending on the cardiograph model.

#### Wireless Adapters for TC30/50/70 Cardiographs

The PageWriter TC30, TC50 and TC70 cardiographs offer wireless connectivity through cardiograph wireless LAN options D21 and D22. Both of these wireless options include the Summit Data Communications Compact Flash Card wireless adapters with Integrated Antenna (also referred to as a *radio card*). These adapters offer an integrated diversity antenna with enhanced transmit power and receiver sensitivity, and with superior delay spread and roaming capabilities, delivering dependable connectivity in almost all demanding clinical environments, including those with limited access point availability, and those with numerous and competing wireless devices.

The D21 adapter is compatible with both the 802.11b and g wireless standards, and operates in the 2.4 GHz section of the radio frequency spectrum, providing a data transmission rate of 54 megabits per second (Mbps). The D22 adapter is compatible with the 802.11a, b, and g standards, and operates dually in either the 2.5 GHz or 5 GHz section of the radio frequency spectrum. Operating in the 5 GHz range provides optimal connectivity in high use, competitive wireless environments.
The PageWriter TC cardiograph software includes the Summit Client Utility (SCU), which allows you to configure all radio operation and security settings. The utility also enables you to view operating status and to troubleshoot adapter issues.

For detailed information about the Summit adapters, including how to install and configure wireless communication, refer to the PageWriter TC Cardiograph Wireless LAN Installation Instructions, part number 453564165831, provided with the adapter.

**Wireless Adapter for TC20 Cardiographs**

The PageWriter TC20 cardiograph supports the AmbiCom WL150N USB wireless adapter, available as option D23.

The adapter is a USB dongle that includes an integrated diversity antenna with enhanced transmit power and receiver sensitivity, and with superior delay spread and roaming capabilities. It delivers dependable connectivity in almost all demanding clinical environments, including those with limited access point availability, and those with numerous and competing wireless devices.

The AmbiCom adapter is compatible with both the 802.11b and g wireless standards, and operates in the 2.4 GHz section of the radio frequency spectrum, providing a data transmission rate of up to 54Mbps.

Configuration is simple, using the Microsoft NetUI utility to set up and control network connections and security settings.

For detailed information about the AmbiCom adapter, including how to install and configure wireless communication, refer to the PageWriter TC20 Cardiograph Wireless LAN Installation Instructions, part number 453564267741, provided with the adapter.

**Testing the Network or Modem Connection**

Use the **Ping Test** available in the **Maintenance Test** menu in Setup to verify that the configured wired or wireless network connection can successfully communicate over a network connection to an entered IP address.

**To perform the Ping Test:**

1. Ensure that the LAN cable is securely attached to the LAN connector on the rear of the cardiograph, or that the wireless LAN adapter is associated to an access point and that green bars appear on the Status bar (top of screen), indicating a live wireless connection.

2. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.

3. On the menu, touch **Configure Cardiograph Default Settings**.

4. On the Default Cardiograph Settings screen, touch **Maintenance Test**.
5 On the Maintenance Test screen, touch **Ping Test**. The Ping Test window appears.

6 Type the IP address to ping, then touch **Ping**.

The Ping Test results window appears and reports the test results.
Configuring TraceMaster ECG Management System Settings

The PageWriter TC cardiographs can communicate over an Ethernet LAN, wireless LAN, or modem with the Philips TraceMaster ECG Management System for an integrated order and ECG management workflow solution. Enabling cardiograph connectivity with a TraceMaster server allows for the direct downloading of pending patient orders to the cardiograph, and for the subsequent uploading of completed orders and associated ECGs to TraceMaster for reconciliation, review, and processing. Also, you can enable the Last ECG and interactive query features on the cardiograph so that you can download ECGs directly from a TraceMaster server to the cardiograph for on-screen review, printing, and previous ECG comparison purposes directly at the cardiograph.

For more information on any optional cardiograph features described in this chapter (LAN, wireless LAN, modem, orders, ADT support), consult your Philips sales representative, or your local dealer or distributor.

Configuring connectivity between a cardiograph and the TraceMaster ECG Management System with the OrderVue order handling option involves multiple steps, as described in the following table.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>For more information, see...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Configure Wireless LAN Settings (if necessary)</td>
<td>The appropriate Wireless LAN Installation Instructions for your PageWriter TC cardiograph model. For details, see “Configuring the Wireless LAN Settings” on page 2-7.</td>
</tr>
<tr>
<td>2</td>
<td>Configure wired Ethernet LAN settings (if necessary)</td>
<td>“Configuring Cardiograph Network Settings” on page 2-4.</td>
</tr>
<tr>
<td>3</td>
<td>Test network connectivity</td>
<td>“Testing the Network or Modem Connection” on page 2-8</td>
</tr>
<tr>
<td>4</td>
<td>Configure TraceMaster Server connections; test connectivity</td>
<td>“About Configuring TraceMaster Connections” on page 3-3.</td>
</tr>
<tr>
<td>5</td>
<td>Configure time synchronization settings</td>
<td>“Specifying Time Synchronization Settings” on page 3-20.</td>
</tr>
</tbody>
</table>
### Table 3-1  Configuring TraceMaster Connectivity (continued)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>For more information, see...</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Configure Order settings (if necessary); test order</td>
<td>“Configuring OrderVue Settings” on page 4-1.</td>
</tr>
<tr>
<td></td>
<td>connectivity</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Configure Institution Identification Information</td>
<td>See Chapter 2 of the appropriate PageWriter TC Cardiograph Instructions for Use, or use the Setup Help.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For information on using the Setup Help, see “Using Setup Help” on page 1-11</td>
</tr>
<tr>
<td>8</td>
<td>Configure Patient ID settings</td>
<td>See Chapter 2 of the PageWriter TC Cardiograph Instructions for Use.</td>
</tr>
</tbody>
</table>
About Configuring TraceMaster Connections

You use the **ECG Management Systems** settings in Setup to configure a connection to a specific TraceMaster ECG Management System server. Once connected, the cardiograph can retrieve orders and ECG data from the server, as well as transmit completed ECGs back to the server for review, editing, reconciliation, and storage. Cardiographs can connect to a TraceMaster server using a wired or wireless LAN connection, or using a modem.

The Archive is used to transmit ECGs to and from the cardiograph, and to search a configured TraceMaster server for ECGs to save to the cardiograph and to print on the cardiograph. For more information on using the Archive to transmit ECGs to TraceMaster, see the *PageWriter TC Cardiograph Instructions for Use*.

TraceMaster servers appear in the **Transfer Destination** field on the Archive screen.

### About Supported TraceMaster Versions and Compatibility

ECG data is stored on the cardiograph, and then transmitted to the selected TraceMaster server in XML format. Due to limitations with the XML schema version used to transfer ECG data to the TraceMaster server, there are restrictions on the supported algorithm version(s) and the ability to transmit ECG data in extended 16-lead format to certain versions of the TraceMaster ECG Management System.

The TraceMaster ECG Management System version is selected under the **ECG Mgmt Version** field located under the Create TraceMaster tab in Setup.

Table 3-2 provides a listing the available TraceMaster server versions along with the supported XML version, supported algorithm version, and available support for 16-lead data transmission (on supported cardiographs). For further information on the capabilities of specific TraceMaster versions, consult the TraceMaster product documentation.
# Configuring TraceMaster ECG Management System Settings

<table>
<thead>
<tr>
<th>Selected TraceMaster Server Version</th>
<th>XML Schema Version</th>
<th>Supported Algorithm Version(s)</th>
<th>Available 16-Lead Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>TraceMaster NT selected</td>
<td>1.03</td>
<td>Philips 12-Lead Algorithm, version PH090A</td>
<td>Does not support the transmission of ECG data in any extended 15 or 16-lead format.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads</td>
<td>If a 15 or 16-lead ECG is transferred to a TraceMaster NT or TraceMaster A.02.02 server, the additional ECG data for the right side precordial or posterior leads is deleted, and the ECG is transferred in standard 12-lead format.</td>
</tr>
</tbody>
</table>

**Supported TraceMaster version:**
- TraceMaster NT (no orders support)
Table 3-2   TraceMaster Server Version Compatibility (continued)

<table>
<thead>
<tr>
<th>Selected TraceMaster Server Version</th>
<th>XML Schema Version</th>
<th>Supported Algorithm Version(s)</th>
<th>Available 16-Lead Support</th>
</tr>
</thead>
</table>
| TraceMasterVue B.02 selected        | 1.04               | • Philips 12-Lead Algorithm, version PH090A  
  • Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads | • Full ECG data from extended 15 or 16-lead ECGs is transferred to the TraceMaster ECG Management System. However, serial comparison is not supported for extended leads.  
  • Custom extended lead configurations are not supported in TraceMaster. Only ECGs that use the specified Posterior, Balanced, or Pediatric lead configurations are supported (see Table 3-3 on page 9-9).  
  • ECGs containing a custom lead configuration will be rejected. |

Supported TraceMasterVue versions:

- TraceMaster B.01
- TraceMaster B.02
### TraceMaster Server Version Compatibility (continued)

<table>
<thead>
<tr>
<th>Selected TraceMaster Server Version</th>
<th>XML Schema Version</th>
<th>Supported Algorithm Version(s)</th>
<th>Available 16-Lead Support</th>
</tr>
</thead>
</table>
| **TraceMasterVue B.03 selected**    | 1.04               | - Philips 12-Lead Algorithm, version PH090A  
- Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads  | - Full ECG data from extended 15 or 16-lead ECGs is transferred to the TraceMaster ECG Management System. However, serial comparison is not supported for extended leads.  
- Custom extended lead configurations are not supported in TraceMaster. Only ECGs that use the specified Posterior, Balanced, or Pediatric lead configurations are supported (see Table 3-3 on page 9-9).  
- ECGs containing a custom lead configuration will be rejected. |

**Supported TraceMasterVue version:**
- TraceMaster B.03 (including TraceMaster Basic Edition and TraceMaster MD support)
### Table 3-2  TraceMaster Server Version Compatibility (continued)

<table>
<thead>
<tr>
<th>Selected TraceMaster Server Version</th>
<th>XML Schema Version</th>
<th>Supported Algorithm Version(s)</th>
<th>Available 16-Lead Support</th>
</tr>
</thead>
</table>
| TraceMasterVue C.01 selected         | 1.04.01            | - Philips 12-Lead Algorithm, version PH090A  
                                      |                     | - Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads  
                                      |                     | - Philips DXL 16-Lead ECG Algorithm, version PH100B; this version provides full interpretation for up to 16 leads  
                                      |                     | - TraceMaster supports storage, review, edit, and confirmation of ECGs that include the Philips DXL 16-Lead ECG Algorithm, but does not allow for serial comparison of these ECGs.  
                                      |                     | - Custom extended lead configurations are not supported in TraceMaster. Only ECGs that use the specified Posterior, Balanced, or Pediatric lead configurations are supported (see Table 3-3 on page 9-9).  
                                      |                     | - ECGs containing a custom lead configuration will be rejected.  
| Supported TraceMasterVue version:   |                    |                                |                           |
| TraceMaster C.01 (including full multimodality support) |                    |                                |                           |
### Table 3-2 TraceMaster Server Version Compatibility (continued)

<table>
<thead>
<tr>
<th>Selected TraceMaster Server Version</th>
<th>XML Schema Version</th>
<th>Supported Algorithm Version(s)</th>
<th>Available 16-Lead Support</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TraceMasterVue C.02 selected</strong></td>
<td>1.04.01</td>
<td>- Philips 12-Lead Algorithm, version PH090A&lt;br&gt;- Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads&lt;br&gt;- Philips DXL 16-Lead ECG Algorithm, version PH100B; this version provides full interpretation for up to 16 leads</td>
<td>- TraceMaster supports storage, review, edit, and confirmation of ECGs that include the Philips DXL 16-Lead ECG Algorithm, but does not allow for serial comparison of these ECGs.&lt;br&gt;- Custom extended lead configurations are not supported in TraceMaster. Only ECGs that use the specified Posterior, Balanced, or Pediatric lead configurations are supported (see Table 3-3 on page 9-9).&lt;br&gt;- ECGs containing a custom lead configuration will be rejected.</td>
</tr>
</tbody>
</table>

**Supported TraceMasterVue versions:**
- TraceMaster C.02
- TraceMaster C.03
### About TraceMaster Supported Extended Lead Configurations

Table 3-3 describes the 15 and 16-lead configurations that are supported by the TraceMaster ECG Management System version B.01 and higher.

#### Table 3-3 TraceMaster Version B.01 and Higher Supported Extended Lead Configurations

<table>
<thead>
<tr>
<th>Lead Option</th>
<th>Standard 12-leads plus extended leads (AAMI/IEC)</th>
<th>Lead Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric (15 leads)</td>
<td>V3R/C3R, V4R/C4R, V7/C7</td>
<td><img src="image" alt="Pediatric Lead Placement" /></td>
</tr>
<tr>
<td>Posterior (15 leads)</td>
<td>V7/C7, V8/C8, V9/C9</td>
<td><img src="image" alt="Posterior Lead Placement" /></td>
</tr>
</tbody>
</table>
About Security

The cardiograph offers the Secure Sockets Layer (SSL) encryption protocol for the secure transmission of ECG and order data between a TraceMaster server and the cardiograph.

**NOTE** To fully enable SSL encryption, you must enable it both on the cardiograph and on the TraceMaster system(s) that the cardiograph will connect to.

### Configuring a TraceMaster Connection

The cardiograph transmits ECG and order data to a TraceMaster ECG Management System using a wired or wireless network connection, or via a Remote Access Server (RAS) connection using a modem. For details, see:

- “Configuring a Network TraceMaster Connection” on page 3-11.
- “Configuring a TraceMaster Connection with the Modem” on page 3-13.
Configuring a Network TraceMaster Connection

You can configure a wireless LAN or Ethernet LAN connection to transfer data between the cardiograph and a TraceMaster server.

To configure a TraceMaster connection using a LAN or WLAN:

1. On the Main screen, touch Setup on the tool bar. The Setup main menu appears.
3. Touch ECG Mgmt Systems. The Create TraceMaster tab appears.
**Configuring TraceMaster ECG Management System Settings**

4 Type data into the fields on the screen as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server URL</td>
<td>Type the computer name or the IP address of the TraceMaster server, using the following format.</td>
</tr>
<tr>
<td></td>
<td><code>http://&lt;Computer Name&gt;/emscomm/</code> or <code>//&lt;IP Address&gt;/emscomm/</code></td>
</tr>
<tr>
<td></td>
<td>All elements are required, including “emscomm” and the final forward slash <code>/</code>. Replace <code>&lt;Computer Name&gt;</code> or <code>&lt;IP Address&gt;</code> with the specific information for the TraceMaster server.</td>
</tr>
<tr>
<td></td>
<td>Valid URL addresses are, for example:</td>
</tr>
<tr>
<td></td>
<td><code>http://TraceMasterVue/EMSCOMM/</code></td>
</tr>
<tr>
<td></td>
<td><code>http://10.101.2.42/EMSCOMM/</code></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> If configuring the cardiograph to communicate with a TraceMaster Blade server, it is recommended that a <em>Computer Name</em> be used rather than an <em>IP Address</em>. For more information, see the TraceMasterVue product documentation.</td>
</tr>
<tr>
<td>User Name</td>
<td>Type a valid user name that has permission to log into the TraceMaster server.</td>
</tr>
<tr>
<td></td>
<td>The user name specified must be a member of a TraceMaster group that has View privileges to TraceMaster data. For more information, see the TraceMasterVue product documentation.</td>
</tr>
<tr>
<td>Password</td>
<td>Type the password associated with the user name.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> The password can contain a maximum of 15 characters. If it is longer, transmission to TraceMasterVue fails.</td>
</tr>
<tr>
<td>Computer Name</td>
<td>This field is only used when configuring a shared folder for use with the PDF Export, or a remote PC used for log and custom setting file transfer. For more information, see Chapter 5, “Configuring PDF Export and Remote PC Settings.”</td>
</tr>
<tr>
<td>Enable SSL</td>
<td>Touch <strong>ON/OFF</strong> to enable or disable the Secure Socket Layer (SSL) encryption.</td>
</tr>
<tr>
<td></td>
<td>If enabled on the cardiograph, you must also enable SSL on the TraceMaster server; otherwise, ECGs will not be transferred.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> If you are using SSL encryption, you do not need to enable the separate <em>Encryption</em> option.</td>
</tr>
</tbody>
</table>
### Configuring a TraceMaster Connection

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression</td>
<td>Touch <strong>ON/OFF</strong> to enable or disable lossless ECG compression.</td>
</tr>
<tr>
<td></td>
<td>This option enables/disables compression of ECGs for transfer to a TraceMaster server. Compressing ECGs results in shorter transmission times. An uncompressed ECG is generally around 220Kb; compressed, around 40Kb. When enabled, ECGs are compressed using Zlib, lossless compression. Upon receipt on the TraceMaster server, the ECG is uncompressed.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> Supported only with TraceMasterVue version C.01 and higher.</td>
</tr>
<tr>
<td>Encryption</td>
<td>Touch <strong>ON/OFF</strong> to enable or to disable data encryption.</td>
</tr>
<tr>
<td></td>
<td>Encryption protects patient privacy. This option enables/disables encryption of ECGs to ensure secure transmission to TraceMaster servers. Upon transmission of ECGs to the TraceMaster server, the cardiograph uses a 40-bit encryption key. Upon receipt on the TraceMaster server, the ECG file is decrypted prior to storage. When enabled, data is encrypted.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTES</strong></td>
</tr>
<tr>
<td></td>
<td>- When <strong>ENABLE SSL</strong> is selected on the cardiograph as well as on the remote server, you do not need to select the Encryption option.</td>
</tr>
<tr>
<td></td>
<td>- The Encryption option is only supported with TraceMasterVue vC.01 and higher.</td>
</tr>
</tbody>
</table>

Field Set as follows...

- Touch **ON/OFF** to enable or disable lossless ECG compression.

This option enables/disables compression of ECGs for transfer to a TraceMaster server. Compressing ECGs results in shorter transmission times. An uncompressed ECG is generally around 220Kb; compressed, around 40Kb. When enabled, ECGs are compressed using Zlib, lossless compression. Upon receipt on the TraceMaster server, the ECG is uncompressed.

**NOTE** Supported only with TraceMasterVue version C.01 and higher.

- Touch **ON/OFF** to enable or to disable data encryption.

Encryption protects patient privacy. This option enables/disables encryption of ECGs to ensure secure transmission to TraceMaster servers. Upon transmission of ECGs to the TraceMaster server, the cardiograph uses a 40-bit encryption key. Upon receipt on the TraceMaster server, the ECG file is decrypted prior to storage.

When enabled, data is encrypted.

**NOTES**

- When **ENABLE SSL** is selected on the cardiograph as well as on the remote server, you do not need to select the Encryption option.
- The Encryption option is only supported with TraceMasterVue vC.01 and higher.
### Configuring TraceMaster ECG Management System Settings

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>TraceMaster Server</td>
<td>Select the TraceMaster version from the dropdown list.</td>
</tr>
<tr>
<td>Version</td>
<td>Selecting the version also sets the XML version for ECG storage and transfer.</td>
</tr>
</tbody>
</table>

#### NOTES

- The Compression and Encryption options are only supported with TraceMasterVue vC.01.
- For TraceMasterVue vC.03, select TraceMasterVue C.02.
- For TraceMasterVue c B.01, select TraceMaster B.02.
- For TraceMasterVue vA.04.02, select TraceMaster NT.

5 Touch **Save Settings** to save the connection.

The Save TraceMaster Connection dialog box appears, prompting you to name this TraceMaster connection. The name you specify is what will appear on the Archive screen when transferring ECGs from the cardiograph to TraceMaster.

6 Type the name to identify this connection, then touch **OK**.

The site is saved, and the Edit/Delete TraceMaster screen appears, with the newly added connection displayed in the server list.
You can now continue to verify and configure TraceMaster settings as follows:

- Test the new TraceMaster connection (page 3-19).
- Set the default TraceMaster server connection to use for this cardiograph (page 3-19).
- Set time synchronization settings for this connection (page 3-20).

**Configuring a TraceMaster Connection with the Modem**

The cardiograph can transmit ECG data to a TraceMaster server via a Remote Access Server (RAS) connection using the optional modem. For information on using the modem to fax ECGs to a remote receiving fax machine, see “Configuring FAX Settings” on page 7-1.

**WARNING** Never connect the modem card to a phone line when the cardiograph is connected to a patient.

**NOTE** The PageWriter TC20 cardiograph does not support modem communication.

To configure a TraceMaster connection using a modem:

1. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2. On the menu, touch **Configure ECG Network Settings**. The Wire Network tab appears.
3. Touch **ECG Mgmt Systems**.
4. Under Connectivity Settings, touch **Modem Settings**.
Specify fields as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modem Card</td>
<td>Read-only field showing the installed internal modem card.</td>
</tr>
<tr>
<td>Phone Number</td>
<td>Type the TraceMaster RAS server modem telephone number.</td>
</tr>
<tr>
<td>User Name (RAS)</td>
<td>Type a valid user account that has permission to log into the server through RAS.</td>
</tr>
<tr>
<td></td>
<td>The domain name, which is the computer name of the TraceMaster (RAS) server, must be specified together with the user name.</td>
</tr>
<tr>
<td></td>
<td>For example, if the domain name for the TraceMaster server is TMVue1, and the user name is pwt, type TMVue1/pwt into the User Name field. The same Domain name is entered into the Domain field.</td>
</tr>
<tr>
<td>Password</td>
<td>Type the password associated with the user name.</td>
</tr>
<tr>
<td>Domain</td>
<td>The computer name of the TraceMaster (RAS) server. Required for modem connection.</td>
</tr>
<tr>
<td></td>
<td>The domain is also specified in the User Name field.</td>
</tr>
<tr>
<td>Enable SSL</td>
<td>Touch ON/OFF to enable or disable the Secure Socket Layer (SSL) encryption.</td>
</tr>
<tr>
<td></td>
<td>If enabled on the cardiograph, you must also enable SSL on the TraceMaster server; otherwise, ECGs will not be transferred.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> If you are using SSL encryption, you do not need to enable the separate Encryption option.</td>
</tr>
</tbody>
</table>
### Configuring a TraceMaster Connection

#### Compression Touch

**ON/OFF** to enable or disable lossless ECG compression.

This option enables/disables compression of ECGs for transfer to a TraceMaster server. Compressing ECGs results in shorter transmission times. An uncompressed ECG is generally around 220Kb; compressed, around 40Kb.

When enabled, ECGs are compressed using Zlib, lossless compression. Upon receipt on the TraceMaster server, the ECG is uncompressed.

**NOTE** Supported only with TraceMasterVue version C.01 and higher.

#### Encryption Touch

**ON/OFF** to enable or to disable data encryption.

Encryption protects patient privacy. This option enables/disables encryption of ECGs to ensure secure transmission to TraceMaster servers. Upon transmission of ECGs to the TraceMaster server, the cardiograph uses a 40-bit encryption key. Upon receipt on the TraceMaster server, the ECG file is decrypted prior to storage.

When enabled, data is encrypted.

**NOTES**

- When **ENABLE SSL** is selected on the cardiograph as well as on the remote server, you do not need to select the **Encryption** option.

- The **Encryption** option is only supported with TraceMasterVue vC.01 and higher.

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression</td>
<td>Touch <strong>ON/OFF</strong> to enable or disable lossless ECG compression.</td>
</tr>
<tr>
<td></td>
<td>This option enables/disables compression of ECGs for transfer to a TraceMaster server. Compressing ECGs results in shorter transmission times. An uncompressed ECG is generally around 220Kb; compressed, around 40Kb. When enabled, ECGs are compressed using Zlib, lossless compression. Upon receipt on the TraceMaster server, the ECG is uncompressed. <strong>NOTE</strong> Supported only with TraceMasterVue version C.01 and higher.</td>
</tr>
<tr>
<td>Encryption</td>
<td>Touch <strong>ON/OFF</strong> to enable or to disable data encryption.</td>
</tr>
</tbody>
</table>
|             | Encryption protects patient privacy. This option enables/disables encryption of ECGs to ensure secure transmission to TraceMaster servers. Upon transmission of ECGs to the TraceMaster server, the cardiograph uses a 40-bit encryption key. Upon receipt on the TraceMaster server, the ECG file is decrypted prior to storage. When enabled, data is encrypted. **NOTES**  
  - When **ENABLE SSL** is selected on the cardiograph as well as on the remote server, you do not need to select the **Encryption** option.  
  - The **Encryption** option is only supported with TraceMasterVue vC.01 and higher. |
Configuring TraceMaster ECG Management System Settings

6 Touch **Save Settings** to save the connection.

The Save TraceMaster Connection dialog box appears, prompting you to name the new TraceMaster connection. The name you specify is what will appear in the Archive screen dropdown list on the cardiograph. The Archive is used to transfer ECGs to TraceMaster and to download ECGs from TraceMaster to the cardiograph.

7 Type the name to identify this remote site, then touch **OK**.

**NOTE**

Be sure there are no spaces in the TraceMaster connection name. Spaces prevent the modem from connecting to the server.

The site is saved, and the Edit/Delete TraceMaster screen appears, with the newly added connection displayed in the server list.

You can now continue to verify and configure TraceMaster settings as follows:

- Test the new TraceMaster connection (page 3-19)
- Set the default TraceMaster server connection to use for this cardiograph (page 3-19)
- Set time synchronization settings for this connection (page 3-20)
- Set Auto Logs settings for this connection (page 3-22)

### TraceMaster Server Version

Select the TraceMaster version from the dropdown list. Selecting the version also sets the XML version for ECG storage and transfer.

![TraceMaster Server Version Dropdown](image)

**NOTES**

- The **Compression** and **Encryption** options are only supported with TraceMasterVue vC.01.
- For TraceMasterVue vC.03, select **TraceMasterVue C.02**.
- For TraceMasterVue c B.01, select **TraceMaster B.02**.
- For TraceMasterVue vA.04.02, select **TraceMaster NT**.
Testing the TraceMaster Connection

Follow the procedure below to test the new connection between the TC cardiograph and a TraceMaster server.

**To test connection to the server:**

1. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2. On the menu, touch **Configure ECG Network Settings**.
3. Touch **LAN/WLAN Settings**.
4. In the **Network Test** section, type the IP address of the server to test in the **IP Address** field.
5. Touch **Ping**.

If the cardiograph can connect to the server, the test is successful and the cardiograph can transmit data to the server.

If the test fails, refer to the troubleshooting information, or consult your network administrator for further assistance.

Setting the Default TraceMaster Server

After defining one or more TraceMaster connections, you must set a default TraceMaster server for this cardiograph to connect to when transmitting ECGs from the Archive. This is the connection the cardiograph will automatically connect to unless another configured server is manually selected prior to transferring ECGs from the Archive. In addition, this is the server that the cardiograph will use for synchronizing time settings.

If no server is configured as the default, this field shows the text, *No default connection*.

**NOTE**

To be able to synchronize the time between the cardiograph and a TraceMaster server, you must define the default server with which to synchronize.

**To set the default TraceMaster server:**

1. On the **Edit/Delete TraceMaster** screen, touch the **Select TraceMaster Server** field and select the server to set as the default.
2 Touch **Default**.

The name of the selected server now appears in the **Current default TraceMaster server** field.

You can now set time synchronization options for this cardiograph and the default server.

**Specifying Time Synchronization Settings**

At any time, you can manually set the date and time on the cardiograph, or you can configure the cardiograph to automatically synchronize the date and time with a specified default TraceMaster server.

When the Time Sync feature is set to **Automatic**, every time the cardiograph goes into Standby, the system looks at when the time was last synchronized, and, if the following conditions are met, downloads the current time from the server and updates the cardiograph local time:

- The cardiograph enters Standby (power save)
- It has been 8 hours or more since the last Time Synchronization
- The battery is NOT low (the cardiograph is not emitting an alert sound and battery life is greater than 20%)
- The last Time Synchronization process was successfully completed
- The cardiograph does NOT exit Standby during the synchronization process
- The synchronizing server is up and running, and is properly configured

**NOTE** Manually setting the date and time on the cardiograph does not affect or delay an automatic time synchronization.
Figure 3-1  Edit/Delete TraceMaster Connection tab and Time Synchronization Settings

To define time settings for the cardiograph:

1  Ensure a default TraceMaster connection is selected to synchronize with. See “Setting the Default TraceMaster Server” on page 3-19.

2  Do any of the following:

<table>
<thead>
<tr>
<th>Action</th>
<th>Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronize the time to the server right now.</td>
<td>Touch <strong>Sync</strong> next to Manual Time Sync.</td>
</tr>
<tr>
<td></td>
<td>The cardiograph downloads the current date/time from the server and updates the</td>
</tr>
<tr>
<td></td>
<td>cardiograph local date/time.</td>
</tr>
<tr>
<td>Enable automatic time synchronization.</td>
<td>Touch <strong>ON/OFF</strong> next to Automatic Time Synchronization.</td>
</tr>
<tr>
<td></td>
<td>When the button shows ON, it is enabled.</td>
</tr>
<tr>
<td>Manually set the time for the cardiograph</td>
<td>Touch <strong>Set</strong> next to Manual Time Set.</td>
</tr>
<tr>
<td>(independent of the server).</td>
<td>The Date and Time Settings dialog box appears, where you set the date, time, and</td>
</tr>
<tr>
<td></td>
<td>time zone. To manually synchronize with the server now, touch <strong>Time Sync</strong> within</td>
</tr>
<tr>
<td></td>
<td>the calendar dialog box.</td>
</tr>
<tr>
<td></td>
<td>If automatic synchronization is enabled, the cardiograph will still synchronize</td>
</tr>
<tr>
<td></td>
<td>with the server time when the conditions are met (page 3-20).</td>
</tr>
</tbody>
</table>
3 Save your changes by touching **Exit**, and, when prompted to save, touch **Yes**.

You are returned to the Configuration Setup and Service Utilities screen.

**Editing TraceMaster Connection Settings**

Once configured, you can edit TraceMaster connection settings, as well as change the default server for this cardiograph to connect to (page 3-19), and update the time settings (page 3-20).

**To change TraceMaster connection settings:**

1. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2. On the menu, touch **Configure ECG Network Settings**.
3. Touch the **ECG Mgmt Systems** tab, and then touch the **Edit/Delete TraceMaster** tab (page 3-21).
4. Touch the **Select TraceMaster Server** field, and select the desired TraceMaster connection to edit.

5. To change time settings, make your changes in the **Time Synchronization Settings** section of the screen.

6. To change TraceMaster connection settings, touch **Edit**.

The full Edit/Delete TraceMaster Connection screen appears loaded with the settings assigned to the selected connection.
7 Make changes to the settings as necessary.
   To change the name of the server connection, edit the TraceMaster Server field.

8 When finished, touch **Save Settings** to save your changes.
   Once the changes are saved, the cardiograph returns you to the Edit/Delete TraceMaster Connection tab.
Configuring OrderVue Settings

The settings described in this chapter are applicable to the OrderVue order handling option that is installed on a TraceMaster server.

NOTE If you have the ECG Gateway option, refer to the product documentation for worklist configuration. The information provided in this chapter refers exclusively to configuring OrderVue with TraceMasterVue.

About OrderVue Workflow

The OrderVue database resides on the TraceMaster server, and may include an optional ADT option that monitors HL7 ADT updates to existing patient orders.

When an order is entered into the HIS, it is associated with a specific ECG area location code. Once the order is received by OrderVue, the location code is mapped to a virtual orders outbox for classification purposes, to simplify retrieval. This mapping is performed as part of the original configuration of the OrderVue/TraceMaster system at your site.

Multiple location codes can be mapped to a single outbox. For example, the night shift might have responsibility for all orders originating on the 2nd and 3rd floors of your facility for a given day. Departments A, B, and C could have their orders all mapped to the outbox, Floor2-3, for easy retrieval by shift personnel.

On the cardiograph, you configure one or more worklists, which are set to retrieve orders from one or more of the outboxes defined on the server, depending on your site’s requirements for each cardiograph’s primary area of use. A worklist resides solely on the cardiograph, and may consist of several OrderVue outboxes. A cardiograph worklist can be assigned any name that gives meaning to the cardiograph user, or provides meaning within a larger configured orders system.
Figure 4-1  OrderVue Outbox to Cardiograph Order Worklist Configuration
OrderVue Configuration Overview

Briefly, configuring OrderVue settings on the cardiograph includes the following steps:

1. Ensure that all TraceMaster Connection settings are accurate and complete.
2. Test the connectivity between the cardiograph and the configured TraceMaster Connection. If it is successful, proceed to configuring order settings.
3. Select a TraceMaster connection.
4. Map one or more order outboxes on the TraceMaster server to one or more OrderVue worklists on the cardiograph. A single cardiograph worklist may be mapped to receive data from several different outboxes. As part of this mapping, you specify:
   - Which orders are specified to be downloaded to the cardiograph; the orders can be sorted by status (new or all), priority (STAT or all others) and when the orders are due (the current day only, or the current day and the following day, or other options).
   - Whether amended or updated orders downloaded to the cardiograph replace the existing orders, or are added to the list as a new order.
   - Whether the assigned cardiograph user is permitted the ability to download orders only, or is permitted access to download and search for orders.
5. Save and name the worklist.
6. Conduct a test orders search for the newly created worklist.
7. Select general order settings, including settings for orders loaded onto the cardiograph from a USB memory stick. These orders originate from the WebSelect Utility application, which is only used with OrderVue.

Note that you can edit a configured worklist any time after creation. See “Editing Worklist Settings” on page 4-11.

Before You Begin

To ensure that worklist creation proceeds smoothly and efficiently, have available:

- The location/identifying information for order outboxes or POCs from which you will be pulling orders to build worklists on the cardiograph.
- The list of worklists you wish to create. Mapping out the order locations/desired worklist assignments ahead of time will save you time and effort.

For example, the night shift might have responsibility for all orders originating on the 2nd and 3rd floors of your facility for a given day. Departments A, B, and C on these floors could have their orders all mapped to a cardiograph worklist named **Floor2-3** for easy retrieval by shift personnel.
Creating a Worklist

Use this procedure for mapping outboxes on the TraceMaster server to worklists on the cardiograph.

**NOTE** In the following procedure, the terms *inbox* and *worklist* are synonymous and are used interchangeably.

**To create an OrderVue worklist:**

1. Have available the information listed in “Before You Begin” on page 4-3.
2. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
3. On the menu, touch **Configure ECG Network Settings**.
4. Touch **ECG Mgmt Systems**, then touch the **OrderVue Settings** tab. The Create OrderVue Inbox screen appears.

5. In the **TraceMaster Server** field, select a configured TraceMaster connection entry.
6 Under **Available Outboxes**, touch **Refresh** to retrieve the available OrderVue outboxes available on the selected server.

The Available Outboxes list shows the departments that generate orders.

The cardiograph connects to the server and retrieves all of the available entries, and displays them in the **Available Outboxes** list; this may take a few moments. This forms the list of outboxes from which you can pull orders.

7 Once the list is refreshed, touch one or more entries from which to collect orders for this worklist. You can:
   - Hold down the **Shift** key to select multiple entries.
   - Touch **Select All** to choose all of the entries.

8 Once selected, touch the right arrow to move the entries to the **Selected Outboxes** list.

The worklist you are defining will pull orders from these selected entries. You can populate the worklist as follows:
   - To remove entries from the **Selected Outboxes** list, select the entries to remove, and touch the left arrow to move them back to the **Available** list.
   - To remove all of the entries from this worklist and start over, touch **Select All** under the **Selected Outboxes** list, then touch the left arrow.

In this example, only one entry was selected.
Configure which orders to retrieve from the selected outboxes as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Download</td>
<td>These options determine whether incoming orders overwrite the existing worklist or whether they are appended to the end of the worklist.</td>
</tr>
<tr>
<td>Options</td>
<td></td>
</tr>
<tr>
<td>Delete and Replace</td>
<td>Touch this option to have all existing orders deleted from the worklist each time that orders are downloaded.</td>
</tr>
<tr>
<td>Append</td>
<td>Touch this option to have new or updated orders added to the bottom of the worklist (no existing orders are deleted). This is the default setting.</td>
</tr>
<tr>
<td>Download Orders</td>
<td>When enabled, allows orders to be downloaded to this cardiograph. The option is enabled when the button shows ON (the default).</td>
</tr>
<tr>
<td>Status</td>
<td>These options determine which orders are downloaded to this worklist.</td>
</tr>
<tr>
<td>All</td>
<td>All orders are downloaded to the worklist, regardless of their status. This is the default setting.</td>
</tr>
<tr>
<td>New</td>
<td>Only orders that are new to the system and have not been previously downloaded to the cardiograph are downloaded.</td>
</tr>
<tr>
<td>Priority</td>
<td>These options determine what priority orders are downloaded to this worklist.</td>
</tr>
<tr>
<td>All</td>
<td>All orders are downloaded, regardless of their priority.</td>
</tr>
<tr>
<td>STAT</td>
<td>Only orders that are marked as STAT (urgent) are downloaded to this worklist.</td>
</tr>
<tr>
<td>Find Orders</td>
<td>When enabled, allows users to search for orders directly from the cardiograph. The option is enabled when the button shows ON (the default).</td>
</tr>
</tbody>
</table>
Creating a Worklist

10 When finished, save the worklist by touching **Save Settings**.

The Save Inbox dialog box appears, prompting you to name the worklist.

The name you specify appears in the Select OrderVue Inbox list on the Edit/Delete OrderVue Inbox tab.

11 Type the name to identify this worklist, then touch **OK**.

You are now ready to test the worklist settings.

### Available Search Range

This option designates the originating time span for pending orders downloaded to this worklist. This range can be set in units of hours or days.

The maximum range that can be set for is from up to 99 hours or days previous to the current time or date, or 99 hours or days ahead of the current time or date.

For example, to designate the download of orders that originate from a timespan of yesterday to up to 9 hours in the future, type 1 in the Previous field and select Days as the unit. Then, type 9 into the Next field and select Hours as the unit.

These values also determine the time or date range in which users can search for orders (if the search feature is enabled).

**NOTE** Typing 0 in either the Previous or Next fields disables that specific field when an order search is conducted on the cardiograph. Typing 0 in both fields removes the time range entirely from the search criteria.

| Field          | Set as follows ...
|----------------|---------------------------------------------------
| Available Search Range | This option designates the originating time span for pending orders downloaded to this worklist. This range can be set in units of hours or days. The maximum range that can be set for is from up to 99 hours or days previous to the current time or date, or 99 hours or days ahead of the current time or date. For example, to designate the download of orders that originate from a timespan of yesterday to up to 9 hours in the future, type 1 in the Previous field and select Days as the unit. Then, type 9 into the Next field and select Hours as the unit. These values also determine the time or date range in which users can search for orders (if the search feature is enabled). **NOTE** Typing 0 in either the Previous or Next fields disables that specific field when an order search is conducted on the cardiograph. Typing 0 in both fields removes the time range entirely from the search criteria.
| Previous       | Time, set in hours or days, prior to the current date, during which to search for orders.
| Next           | Time, set in hours or days, after the current date, during which to search for orders. |
Testing Worklist Settings

After you have defined and named a worklist, test that it retrieves the desired records, as described in the following procedure.

**NOTES**
You can also test an individual worklist connection when configuring a worklist on the *Create OrderVue Inbox* screen by selecting a worklist and touching **Test Search**, then following the steps specified here to retrieve orders.

**To test OrderVue worklist settings:**

1. On the OrderVue Settings tab, touch the Edit/Delete OrderVue Inbox tab.

2. In the Select OrderVue Inbox list, select the desired entry, and touch **Edit**. The selected worklist settings are displayed in the Edit/Delete OrderVue Inbox screen.
3 Touch **Test Search**. The Order Test Search window appears.

The **TraceMaster Server** field shows the server on which the worklist is configured.

4 Touch **Refresh** under the **Available Outboxes** list. The available outboxes on the selected server are retrieved and appear in the list.

5 Touch a specific entry to select it for the test.

6 Enter search information into the applicable fields. This information will be used to search for orders.
   Use the wildcard character (*) to expand the search criteria. Enter as much information as necessary to retrieve an order.

7 When done, touch **Search**. Orders that match the entered search criteria appear on the screen.

   If the test is successful, you can proceed to other configuration tasks.
   If the test is not successful and no orders appear on the screen, try entering more specific search information, or consult your network administrator.

You are now ready to set any additional order-related settings using the Edit/Delete OrderVue Inbox screen. You can also edit an existing worklist using this screen.
Setting General OrderVue Options

Follow the procedure below to specify settings that apply to all cardiograph worklists, and to all orders that are manually downloaded to the cardiograph using a USB memory stick.

Orders that are loaded on the cardiograph from a USB memory stick originate from the OrderVue WebSelect Utility application. The OrderVue WebSelect Utility application is only used with OrderVue. For information on the OrderVue WebSelect Utility, see the OrderVue Web Select Utility Quick Help Card, available as a download from the Philips InCenter site (incenter.medical.philips.com).

To specify general order settings:

1. On the Main screen, touch Setup on the tool bar. The Setup main menu appears.
2. On the menu, touch Configure ECG Network Settings.
3. Touch ECG Mgmt Systems, then touch the OrderVue Settings tab. The Create OrderVue Inbox screen appears.
4. Touch the Edit/Delete OrderVue Inbox tab. The Edit/Delete OrderVue Inbox screen appears.

5. Set options for downloading orders from a memory stick as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB Memory Stick</td>
<td>Set these options to determine how orders are added to the USB memory stick.</td>
</tr>
</tbody>
</table>
Set the desired Delete Order after Archiving the ECG option to **ON** or **OFF**.

This option affects all orders downloaded to the cardiograph and applies to all worklists. When enabled (set to **ON**, the default setting), the cardiograph automatically deletes an order from a worklist once the ECG associated with the order is taken and saved to the Archive.

To edit an existing worklist, see the instructions provided in “Editing Worklist Settings” on page 4-11.

When finished, save the settings by touching **Exit**.

The Save Settings dialog box appears, prompting you to save your settings.

Touch **Yes**.

Order configuration is now complete.

## Editing Worklist Settings

You can edit a configured OrderVue worklist.

**To edit settings for an existing OrderVue worklist:**

1. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2. On the menu, touch **Configure ECG Network Settings**.
3. Touch **ECG Mgmt Systems**, then touch the OrderVue Settings tab.
4. Touch the Edit/Delete OrderVue Inbox tab.
   The Edit/Delete OrderVue Inbox screen appears.
5. Touch the Select OrderVue Inbox field, and select a configured worklist entry; then touch **Edit**.
   The settings for the selected worklist appear on the screen.
6 Edit the settings as necessary.

To change the name of the worklist, edit the OrderVue Inbox field.

You can add/delete outboxes from which to retrieve orders, change delete/append settings, and change any of the other settings, as needed.

7 If you added outboxes from which to retrieve orders, be sure to test the connection to each outbox by touching Test Search.

For details, see “Testing Worklist Settings” on page 4-8.

8 When finished, save the worklist by touching Save Settings. The Save Inbox dialog box appears, prompting you to save your changes.

9 Touch Yes.

Configuration is complete.
Configuring PDF Export and Remote PC Settings

The PageWriter TC cardiographs with installed software version A.04.01 and higher can export ECGs as PDF files from the cardiograph to a specified shared folder on any networked PC.

Further, for service and troubleshooting purposes, the cardiograph can also transmit log files and custom settings files (contain all configuration information) to a shared folder. As a convenience, you can also place software updates into this shared folder and load them onto the cardiograph from this location.

NOTES

- ECGs can also be saved as PDF files directly to a USB memory stick from the Archive. The PDF files can then be loaded onto a PC and viewed using any standard PDF viewer software. Log files and custom settings files can also be saved to a USB memory stick. Saving files to a USB memory stick requires no special configuration on the cardiograph.
- You can save log files to a USB memory stick at any time by pressing Ctrl + Alt + O from any screen. Ensure the USB memory stick is firmly inserted into the USB connector before saving the log file.
- You cannot export PDF reports or access the remote PC using a modem.

Configuration Overview

Perform the following steps in order to configure the cardiograph to transmit PDF files. If you are troubleshooting the cardiograph or have another need for the log or custom settings files, perform these steps to send or receive the appropriate files.

Some steps are performed on the destination PC(s), and others are performed on each cardiograph that will transmit data to the PC.

Each of these steps (except 3) is described in detail in this chapter.

NOTE You can create shared folders on one or more networked PCs. If you are using different computers for PDF export and troubleshooting (log files), repeat the configuration steps on each system.
Configuration on the PC
1. Create one or more user accounts on the PC to access the shared folders you create.
2. Create a shared folder on your networked PC to store PDF format ECG reports.
   For log and custom settings files, as well as software updates, create a separate shared folder, named *PhilipsTC*, for this purpose.

Configuration on the Cardiograph
3. Configure a connection (wired or wireless) from the cardiograph to the PC. For details, see Chapter 2, “Configuring Network Connectivity.”
4. Configure the remote connection for PDF export, and, if needed, for log/custom settings file transfer.
5. Test the new connection.

Configuring the PC
Preparing the PC(s) to which you will export PDF format reports and, possibly for troubleshooting purposes, log or custom settings files, comprises creating shared folders and user accounts for accessing those folders.

You will specify the “share name” you assign to the shared folder(s) on the cardiograph, as well as the user name and password to gain access to the folder(s).

Creating User Accounts
Access to the shared folders you will create is controlled by a user name/password that is defined on each cardiograph, as well as on the PC. We recommend creating separate user accounts for PDF export folders versus a troubleshooting/service function, to view log and settings files.

To create a user account:

- Create one or more easy-to-identify user accounts on the PC that will be used to access shared folders, and assign a password to the account(s).

  Make a note of the exact user name and password. You will use this information when configuring your cardiographs.

Proceed to creating a shared folder, as described next.
Creating Shared Folders

You must create shared folders on the PC to which you will store exported PDF reports, and, if desired for service purposes, log files and custom settings. You can also use a shared folder to store software updates for upload to the cardiograph.

To create a shared folder:

1. On the PC, create one or more folder in the desired location(s).

   NOTE
   If you are defining the folder for logs and custom settings files, you must name the folder PhilipsTC...
   For each folder set sharing permissions as described next.

2. Right-click the folder, and select Sharing and Security from the popup menu.

3. Select the Share this folder radio button, then set the sharing options by specifying an easy-to-identify share name and the desired number of allowable concurrent connections (that is, the number of cardiographs that can potentially access the folder at the same time).

   NOTE
   For the PhilipsTC folder, use the same share name, PhilipsTC

4. Click Permissions.

5. Remove permissions for Everyone, and click Add.

6. Locate the user you added (page 5-2) for this purpose and associate the user to the folder.

7. Give the user Read and Change permission, then click OK.

8. Depending on your site and the security policies in effect, you may need to configure additional settings on the Security tab.

9. When finished, click OK to close out the dialog box.

Configuring the Cardiograph

Configuring each cardiograph comprises defining two connections: the communication transfer between the cardiograph and a remote system, over a wired or wireless LAN, and the PDF export connection. In the case of transmitting log/custom settings files, you must configure a dedicated Remote PC connection.

For details on configuring the LAN/WLAN connection, see Chapter 2, “Configuring Network Connectivity.”

The following sections describe setting up the PDF Export and Remote PC connections.
Configuring a PDF Export Connection

After configuring user accounts and shared folders, configure the connection to the PC to which the cardiograph will export PDF reports.

NOTES

- These steps are different from configuring a remote PC connection to transfer log/custom setting files and software updates. For those details, see “Configuring a Remote PC Connection” on page 5-5.
- The Enable SSL, Compression, and Encryption features are not supported with the PDF Export option.

To configure a PDF export connection:

1. Touch Setup on the tool bar. The Configuration Setup and Service Utilities menu appears.
3. Touch ECG Mgmt Systems. The ECG Management Setup screens appear, and the Create TraceMaster tab is selected.
4. Under System Type, touch ECG Management.
5. Under Connectivity Settings, touch Server Settings.
6. Under Server Settings, leave the Server URL field blank.
7. In the User Name (EMS) field, type the user name that was created to access the shared folder (page 5-2).
8. In the Password field, type the password associated with the user name.
9. In the Computer Name field, type the PC name followed by the shared folder’s name, using the following format: `computername\PDFexport_sharename`
   
   For example, if the PC computer name is `ERT983_12AD` and the PDF export folder is shared as `PDF_reports`, type: `ERT983_12AD\PDF_reports`

10. In the ECG Mgmt Version field, select PDF Export.
11. Touch Save Settings. You are prompted to name the new connection.
12. Type a name and touch OK. This name appears in the following locations:
   - Archive when selecting the connection for ECG PDF transmission
   - On the Edit/Delete TraceMaster tab on the Setup screen if editing settings associated with this connection

NOTE Although the connection is labeled as a TraceMaster Connection on the Save TraceMaster connection window, this connection is not related to any TraceMaster operation.

You can now proceed to testing the PDF settings by transmitting a report. See “Transmitting ECGs as PDF Files from the Archive” on page 5-6.
PDF Export Issues

Only use the configuration steps below if attempts to export PDF reports as described in this chapter are not initially successful. In some cases, it is possible that your network does not have DNS support (the default configuration setting) or your cardiographs may be on a different subnet from the server to which the PDF files are being exported. In those situations, you may need to configure a remote site using a specific IP address, as described next.

**To configure a connection using a destination IP address**

1. Touch **Setup** on the tool bar. The Configuration Setup and Service Utilities menu appears.
2. On the menu, touch **ECG Network Settings**. The Configure Network Settings screen appears.
3. On the **LAN/WLAN Settings** screen, in the **Primary WINS** field, specify the IP address of the server on which to save exported PDF reports.
4. Continue with the rest of the remote site configuration starting with step 3 on page 5-4.

Configuring a Remote PC Connection

A remote PC connection generally is only used for service or troubleshooting purposes. Create this connection only if needed to transfer log and custom settings files, or to load software updates to the cardiograph. Note that, in general, using a USB memory stick to load software updates is the preferred method.

**To configure a remote PC Connection:**

1. Touch **Setup** on the tool bar. The Configuration Setup and Service Utilities menu appears.
2. On the menu, touch **ECG Network Settings**. The Configure Network Settings screen appears.
3. Touch **ECG Mgmt Systems**. The ECG Management Setup screens appear, and the **Create TraceMaster** tab is selected.
4. Under **System Type**, touch **Remote Computer**.
5. In the **User Name (EMS)** field, type the user name that was created to access the shared folder (page 5-2).
6. In the **Password** field, type the password associated with the user name.
7. In the **Computer Name** field, type the PC name followed by the shared folder’s name, PhilipsTC, using the following format: `compuername\PhilipsTC`
   
   For example, if the PC computer name is `ERT983_12AD`, type: `ERT983_12AD\PhilipsTC`
8. Touch **Save Settings** You are prompted to name the new connection.
9 Type a name and touch OK. This name appears in the following locations:
   – Save/Load Settings screen when applying configuration settings
   – Select Remote Computer field under Remote Installation when applying software updates
   – On the Edit/Delete TraceMaster tab on the Setup screen if editing settings associated with this connection

NOTE Although the connection is labeled as a TraceMaster Connection on the Save TraceMaster connection window, this connection is not related to any TraceMaster operation.

You can now proceed to testing the connection by transmitting a file as described on page 5-7.

Editing Settings

You can edit the settings associated with a connection at any time from the Setup screens.

To edit settings:

1 Touch Setup on the tool bar. The Configuration Setup and Service Utilities menu appears.

2 On the menu, touch ECG Network Settings. The Configure Network Settings screen appears.

3 Touch ECG Mgmt Systems, then touch the Edit/Delete TraceMaster tab.

4 Touch the Select TraceMaster Server field and select the desired connection, then touch Edit. The settings associated with the selected connection appear.

5 Edit the settings as necessary.

6 When done, touch Save Settings to save the changes.

   To exit the screen without saving the edits, touch Go Back.

Transmitting ECGs as PDF Files from the Archive

ECG reports in the cardiograph’s internal storage, the Archive, can be exported in PDF format.

To export ECG reports as PDF files:

1 Touch Archive on the tool bar. The number on the button (9) indicates how many ECGs are currently saved to the Main Archive.

2 Ensure that Main Archive - ID Complete is selected. This directory contains all ECGs that can be exported.

NOTE Only ECGs that contain all required patient information can be exported. Required patient information fields are specified by your individual facility.

3 Touch an ECG to select it for export. A selected ECG is highlighted in blue.
After selecting all ECGs to export, touch the Transfer Destination field, and select the desired shared folder (page 5-3) as the destination.

Touch Transfer to export the selected ECGs in PDF format to the specified folder.

The export is complete.

**NOTE** If the export fails, try reconfiguring the connection by specifying a destination IP address. Your network may not have DNS support (the default configuration setting) or your cardiographs may be on a different subnet from the server to which the PDF files are being exported. To add a specific IP address, see page 5-5.

**Transmitting or Receiving Log and Custom Setting Files**

Log files continuously record operating information about the cardiograph including events, errors, application integrity, battery power levels, memory use, test results, and user events related to ECG processing, along with the time and date of each event. These log files are useful in troubleshooting a technical issue with the cardiograph.

For more information on log files, see the *PageWriter TC Cardiograph Service Manual*. For information on using the log files to troubleshoot a technical issue with the cardiograph, contact the nearest Philips Response Center or certified dealer.

You can send log or custom settings files to a remote PC, or receive custom settings files from the PC.

**NOTE** You can save log files to a USB memory stick at any time by pressing Ctrl+Alt+O from any screen. Ensure the USB memory stick is firmly inserted into the USB connector before saving the log file.

**To transmit or to receive log and custom settings files:**

1. Touch Setup on the tool bar. The Configuration Setup and Service Utilities menu appears.
2. On the menu, touch **Configure Clinical Default Settings**.
3. Touch Save/Load (Settings).
4. Choose the appropriate file to work with:
   - To transmit a custom settings file to the shared folder, touch the Save Custom Settings field.
   - To transmit a log file, touch the Save Logs field.
   - To load settings from a shared folder, touch the Load Custom Settings field.
5. Select the connection for the PC that contains the shared folder.
6. Touch Save or Load. The applicable Save or Load window appears.
7 To save the files to the default file name and location, skip to step 8.

To change the file name or location:

a Touch **Browse**, and navigate to the location in which to save the files.

b Rename the file (if desired) and create a new folder (by touching **New Folder**, if desired).

c Touch **OK**.

8 Touch **Save** to save the log files or custom settings files to the specified file name and location, or touch **Load** to load files from the specified location.

The process is complete.
Configuring Third Party ECG Management System Settings

The PageWriter TC cardiographs can communicate over an Ethernet LAN, wireless LAN, or modem with any third party (non-Philips) ECG management system that can accept completed ECGs in Philips XML format. For information on the Philips ECG XML Schema, see “Philips ECG XML Information” on page 1-10. You can also configure the cardiograph to transmit Log files and Custom Settings files (that contain all configuration information) to a specified shared folder on a third party server. For information see, “Configuring PDF Export and Remote PC Settings” on page 5-1.

Figure 6-1  PageWriter TC Cardiograph to Third Party (non-Philips) ECG Management System Workflow
About Configuring Third Party (non-Philips) Connections

Configuring connectivity between a PageWriter TC cardiograph and a third party ECG management system involves multiple steps, as described in Table 6-1.

Table 6-1 Configuring Third Party (non-Philips) Connectivity

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>For more information, see...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Configure Wireless LAN Settings (if necessary); test wireless LAN connectivity</td>
<td>The appropriate Wireless LAN Installation Instructions for your PageWriter TC cardiograph model. For details, see “Configuring the Wireless LAN Settings” on page 2-7.</td>
</tr>
<tr>
<td>2</td>
<td>Configure wired Ethernet LAN settings (if necessary); test LAN connectivity</td>
<td>“Configuring Cardiograph Network Settings” on page 2-4.</td>
</tr>
<tr>
<td>3</td>
<td>Configure third party server settings, test connectivity</td>
<td>“Configuring a Third Party ECG System Connection” on page 6-4.</td>
</tr>
</tbody>
</table>

About Philips ECG XML Versions

ECG data is stored on the cardiograph, and then transmitted to the selected server in a pre-defined Philips ECG XML format. Due to data limitations with the associated XML schema version, there are restrictions on the supported algorithm version(s) and the ability to transmit ECG data in an extended 16-lead format to a remote server.

The XML schema version is selected in the TraceMaster Server Version field located on the Create TraceMaster Connection tab.

**NOTE** Even though the Setup screens in the following procedure display TraceMaster or TraceMaster Connection, the settings are applicable to a third-party ECG management system.

Table 6-2 provides a listing the available XML schema versions, along with the supported algorithm version, and available support for 16-lead data transmission (on supported cardiographs) for each XML schema version.
### Table 6-2 XML Schema Version Compatibility

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other EMS - XML 1.03</strong></td>
<td>1.03</td>
<td>- Philips 12-Lead Algorithm, version PH090A</td>
<td>If a 15 or 16-lead ECG is transferred to a remote server, the additional ECG data for the right side precordial or posterior leads is deleted, and the ECG is transferred in standard 12-lead format.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads</td>
<td></td>
</tr>
<tr>
<td><strong>Other EMS - XML 1.04</strong></td>
<td>1.04</td>
<td>- Philips 12-Lead Algorithm, version PH090A</td>
<td>Custom extended lead configurations are not supported by this XML version. Only ECGs that use the specified Posterior, Balanced, or Pediatric lead configurations are supported (see Table 3-2 on page 9-9).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads</td>
<td></td>
</tr>
<tr>
<td><strong>Other EMS - XML 1.04.01</strong></td>
<td>1.04.01</td>
<td>- Philips 12-Lead Algorithm, version PH090A</td>
<td>Custom extended lead configurations are not supported by this XML version. Only ECGs that use the specified Posterior, Balanced, or Pediatric lead configurations are supported (see Table 3-2 on page 9-9).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Only 12 leads are analyzed with algorithm version PH090A; no analysis is provided for extended leads</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Philips DXL 16-Lead ECG Algorithm, version PH100B; this version provides full interpretation for up to 16 leads</td>
<td></td>
</tr>
</tbody>
</table>
About Security

The cardiograph offers the Secure Sockets Layer (SSL) encryption protocol for the secure transmission of ECG data between the cardiograph and a remote server.

NOTE To fully enable SSL encryption, you must enable it both on the cardiograph and on the remote server that the cardiograph will connect to.

Configuring a Third Party ECG System Connection

The cardiograph transmits ECG data in a specified XML format to a remote server using a wired or wireless network connection, or using a modem connection. For details, see:

- “Configuring a Network Third Party Connection” on page 6-4.
- “Configuring a Third-Party Modem Connection” on page 6-7.

Configuring a Network Third Party Connection

You can configure a wireless LAN or Ethernet LAN connection to transfer data between the cardiograph and a third party system.

NOTE Even though the Setup screens in the following procedure display TraceMaster or TraceMaster Connection, the settings are applicable to a third party ECG management system.

To configure a network-connected third party connection:

1. On the Main screen, touch Setup on the tool bar. The Setup main menu appears.
2. On the menu, touch Configure ECG Network Settings.
3. Touch ECG Mgmt System.
4. Enter data into the fields on the screen as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
</table>
| Server URL        | Type the IP address or the computer name of the third-party server, using the following format.  
                    | http://<IP Address>/                                                             |
                    | Replace <IP Address> with the IP of the server to connect to, or with the computer name.  
                    | A valid URL address is, for example: http://10.101.2.42/                         |
| User Name (EMS)   | Type a valid user account that has permission to log into the server.             |
| Password          | Type the password associated with the user name.                                 |
| Computer Name     | This field is only used when configuring a shared folder for use with the PDF Export, or a remote PC used for log and custom setting file transfer. For more information, see Chapter 5, “Configuring PDF Export and Remote PC Settings.” |
| Enable SSL        | Touch ON/OFF to enable or disable the Secure Socket Layer (SSL) encryption.       |
                    | If enabled on the cardiograph, you must also enable SSL on the ECG management server; otherwise, ECGs will not be transferred. |
                    | **NOTE** If you are using SSL encryption, you do not need to enable the separate Encryption option. |
| Compression       | Touch ON/OFF to enable or disable lossless ECG compression.                      |
                    | This option enables/disables compression of ECGs for transfer to an ECG management server. Compressing ECGs results in shorter transmission times. An uncompressed ECG is generally around 220Kb; compressed, around 40Kb.  
                    | When enabled, ECGs are compressed using Zlib, lossless compression. Upon receipt on the server, the ECG is uncompressed. |
Configuring Third Party ECG Management System Settings

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encryption</td>
<td>Touch <strong>ON/OFF</strong> to enable or to disable data encryption.</td>
</tr>
<tr>
<td></td>
<td>Encryption protects patient privacy. This option enables/disables encryption of ECGs to ensure secure transmission to the servers. Upon transmission of ECGs to the server, the cardiograph uses a 40-bit encryption key. Upon receipt on the TraceMaster server, the ECG file is decrypted prior to storage. When enabled, data is encrypted.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> When <strong>ENABLE SSL</strong> is selected on the cardiograph as well as on the remote server, you do not need to select the <strong>Encryption</strong> option.</td>
</tr>
<tr>
<td>XML Version (found under the TraceMaster Server Version field)</td>
<td>Select the XML version from the dropdown list. For more information on the available XML versions, see “About Philips ECG XML Versions” on page 6-2.</td>
</tr>
</tbody>
</table>

5  Touch **Save Settings** to save the connection.

The Save TraceMaster Connection dialog box appears, prompting you to name the server connection. The name you specify is what will appear in the Archive screen dropdown list on the cardiograph when ECGs are transferred from the cardiograph to this remote server.

6  Type the name to identify this remote server, then touch **OK**.

The site is saved, and the Edit/Delete TraceMaster Connection screen appears, with the newly added third party connection displayed in the server list.

You can now continue to configure this server as follows:

- Test the connection (page 6-10).
- Set the default server connection to use for this cardiograph (page 6-9).
Configuring a Third-Party Modem Connection

The cardiograph can transmit ECG data to a third-party server using the optional modem.

**NOTE**
Even though the Setup screens in the following procedure display TraceMaster or TraceMaster Connection, the settings are applicable to a third-party ECG management system.

**WARNING**
Never connect the modem card to a phone line when the cardiograph is connected to a patient.

To configure a third party connection with a modem:

1. On the Main screen, touch Setup on the tool bar. The Setup main menu appears.
2. On the menu, touch Configure ECG Network Settings.
3. Touch ECG Mgmt Systems. The Create TraceMaster tab appears, with Server Settings selected by default.
4. Touch Modem Settings.

![Modem Settings Screen](image)
Specify fields as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as follows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modem Card</td>
<td>Read-only field showing the installed modem card.</td>
</tr>
<tr>
<td>Phone Number</td>
<td>Type the modem telephone number.</td>
</tr>
<tr>
<td>User Name (RAS)</td>
<td>Type a valid user account that has permission to log into the server.</td>
</tr>
<tr>
<td>Password</td>
<td>Type the password associated with the user name.</td>
</tr>
<tr>
<td>Domain</td>
<td>The computer name of the server. Required for modem connection.</td>
</tr>
<tr>
<td></td>
<td>The domain is also specified in the User Name field.</td>
</tr>
<tr>
<td>Enable SSL</td>
<td>Touch <strong>ON/OFF</strong> to enable or disable the Secure Socket Layer (SSL) encryption.</td>
</tr>
<tr>
<td></td>
<td>If enabled on the cardiograph, you must also enable SSL on the TraceMaster server; otherwise, ECGs will not be transferred.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> If you are using SSL encryption, you do not need to enable the separate Encryption option.</td>
</tr>
<tr>
<td>Compression</td>
<td>Touch <strong>ON/OFF</strong> to enable or disable lossless ECG compression.</td>
</tr>
<tr>
<td></td>
<td>This option enables/disables compression of ECGs for transfer to a TraceMaster server. Compressing ECGs results in shorter transmission times. An uncompressed ECG is generally around 220Kb; compressed, around 40Kb.</td>
</tr>
<tr>
<td></td>
<td>When enabled, ECGs are compressed using Zlib, lossless compression. Upon receipt on the ECG management server, the ECG is uncompressed.</td>
</tr>
<tr>
<td>Encryption</td>
<td>Touch <strong>ON/OFF</strong> to enable or disable data encryption.</td>
</tr>
<tr>
<td></td>
<td>Encryption protects patient privacy. This option enables/disables encryption of ECGs to ensure secure transmission to a server. Upon transmission of ECGs to the ECG management server, the cardiograph uses a 40-bit encryption key. Upon receipt on the server, the ECG file is decrypted prior to storage.</td>
</tr>
<tr>
<td></td>
<td>When enabled, data is encrypted.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> When <strong>ENABLE SSL</strong> is selected on the cardiograph as well as on the remote server, you do not need to select the Encryption option.</td>
</tr>
</tbody>
</table>
Type the name to identify this remote server, then touch **OK**.

**NOTE**

Be sure there are no spaces in the server name; spaces prevent the modem from connecting to the server.

The site is saved, and the Edit/Delete TraceMaster Connection screen appears, with the newly added third party connection displayed in the server list.

You can now continue to configure this server as follows:

- Test the connection (page 6-10)
- Set the default server connection to use for this cardiograph (page 6-9)

### Setting the Default Server

After defining one or more third party servers, you must set a default server for this cardiograph to connect to by default when transmitting ECG data from the Archive. This is the default server the cardiograph will connect to unless another server is selected from the Archive prior to transmission.

If no server is configured as the default, this field shows the text, **No default connection**.

**NOTE**

Even though the Setup screens in the following procedure display **TraceMaster** or **TraceMaster Connection**, the settings are applicable to a third party ECG management system.

**To set the default server:**

1. On the Edit/Delete TraceMaster Connection screen, touch the **Select TraceMaster Server** field, and select the server to set as the default.
Configuring Third Party ECG Management System Settings

2  Touch **Default**.
   The name of the selected server now appears in the **Current default TraceMaster** field.

3  Save your changes by touching **Exit**, and, when prompted to save, touch **Yes**.
   You are returned to the Configuration Setup and Service Utilities screen.

**NOTES**
- The **Time Synchronization Settings** are not supported for use with third-party (non-Philips) ECG management systems.
- You can manually set the date and time by touching **Manual Time Set**.

**Testing the Third-Party Connection**

Be sure to test the configured connection settings between the cardiograph and the third-party server.

**NOTE** Even though the Setup screens in the following procedure display **TraceMaster or TraceMaster Connection**, the settings are applicable to a third party ECG management system.

**To test connection to the server:**

1  On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2  On the menu, touch **Configure ECG Network Settings**. The Wire Network tab appears.
3  In the Network Test section, type the IP address of the server to test in the **IP Address** field.
4 Touch Ping.

If the cardiograph can connect to the server, the test is successful and the cardiograph can transmit data to the server.

If the test fails, refer to the troubleshooting information, or consult your network administrator for further assistance.

Editing Third-Party Settings

Once configured, you can edit server settings, as well as change the default server for this cardiograph to connect to (page 6-9).

**NOTE** Even though the Setup screens in the following procedure display TraceMaster or TraceMaster Connection, the settings are applicable to a third party ECG management system.

**To change third party server settings:**

1. On the Main screen, touch Setup on the tool bar. The Setup main menu appears.
2. On the menu, touch Configure ECG Network Settings.
3. Touch ECG Mgmt Systems, then touch the Edit/Delete TraceMaster tab.
4. Touch the Select TraceMaster Server field, and select the desired configured servers to edit; then touch Edit.

The full Edit/Delete TraceMaster Connection screen appears loaded with the settings assigned to the selected server.
5 Make changes to the settings as necessary.
   To change the name of the server connection, edit the TraceMaster Server field.
6 When finished, touch **Save Settings** to save your changes.
   Once the changes are saved, the cardiograph returns you to the Edit/Delete TraceMaster Connection tab.
Configuring FAX Settings

If you will fax ECGs from the cardiograph, you will need to define a fax recipient.

Special Notes About Fax Transmission

**CAUTION**
- No guarantee is made as to the suitability of a faxed ECG for any particular purpose, due to the variability inherent in fax technology.
- Faxed ECGs should only be sent to secure recipient fax machines.
- The PageWriter TC20 cardiograph does not support FAX communication.

Before You Begin

To ensure that fax setup proceeds smoothly and efficiently, have available all fax information, including recipient names and phone numbers prior to starting.

Creating a Fax Recipient

Use this procedure for creating fax entries on the cardiograph.

**To define a fax recipient:**

1. On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2. On the menu, touch **Configure ECG Network Settings**.
3. Touch **FAX**. The Create a Fax Recipient tab appears.
4 Define fields as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Set as Follows ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modem Card</td>
<td>Read-only field showing the installed modem card.</td>
</tr>
<tr>
<td>Cover Sheet section</td>
<td>Specify cover sheet options for the fax.</td>
</tr>
<tr>
<td>To Name</td>
<td>Type the name of the fax recipient. May specify up to 40 alpha-numeric characters.</td>
</tr>
<tr>
<td>From Name</td>
<td>Type the name to use as the sender of the fax. May specify up to 40 alpha-numeric characters.</td>
</tr>
<tr>
<td>From Station ID</td>
<td>Type the Station ID. May specify up to 40 alpha-numeric characters.</td>
</tr>
<tr>
<td>Memo</td>
<td>Type any information to include on the cover sheet. The memo field can contain a maximum of 300 characters.</td>
</tr>
<tr>
<td>FAX number</td>
<td>Type the fax number to dial. You can use any format, for example, 805-224-0987 or 8052240987.</td>
</tr>
</tbody>
</table>

5 Save your settings by touching **Save Settings**.

The Save Fax Recipient Settings dialog box appears, prompting you to name the fax entry. The name you specify appears in the Select Fax Recipient field on the Edit/Delete a Fax Recipient tab.
6  Type the name to identify this entry, then touch **OK**.

The Fax destination is saved.

You can edit fax recipient information at any time by using the Edit/Delete a Fax Recipient tab.

**Editing a Fax Recipient**

You can edit a configured Fax entry.

**To edit settings for an existing Fax recipient:**

1  On the Main screen, touch **Setup** on the tool bar. The Setup main menu appears.
2  On the menu, touch **Configure ECG Network Settings**.
3  Touch **FAX**. The Create a Fax Recipient tab appears.
4  Touch the Edit/Delete a Fax Recipient tab.

The Edit/Delete a Fax Recipient screen appears.

5  Touch the **Select Fax Recipient** list, and select the desired entry; then touch **Edit**.

The settings for the selected Fax entry appear on the screen.
6 Make changes as needed.
   To change the fax entry name, edit the Fax Recipient field.

7 To save your settings, touch **Save Settings**. You are prompted to confirm your choice.

8 Touch **OK**.

The updated fax recipient settings are saved.
Troubleshooting Communication Issues

As you configure connectivity between the PageWriter TC cardiographs and remote servers, and test each connection, you may encounter some communication problems. The following sections describe some of the more common communication issues, and each section includes solutions to help you solve various communication issues.

Follow the steps outlined in each section in the order shown.

The following suggestions assume that you have tested ECG transmission between the cardiograph and a remote server and it failed.

Troubleshooting a Wired Connection

Table 8-1  Troubleshooting PageWriter Cardiograph/Remote Server Communication Issues

<table>
<thead>
<tr>
<th>What to do ...</th>
<th>Next steps ...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Check all hardware connections. If any cables are loose, re-attach them and test transmission again.</td>
<td>If transmission fails, proceed to step 2.</td>
</tr>
<tr>
<td><strong>2</strong> Ping the server from the cardiograph. Before proceeding, ensure you have the appropriate IP addresses available. See “Editing TraceMaster Connection Settings” on page 3-21 (you can use this same procedure for all remote servers).</td>
<td>Proceed to step 3.</td>
</tr>
<tr>
<td><strong>3</strong> Ping the cardiograph from the server.</td>
<td>If ping fails, proceed to step 4.</td>
</tr>
</tbody>
</table>
### Troubleshooting Communication Issues

**Table 8-1** Troubleshooting PageWriter Cardiograph/Remote Server Communication Issues (continued)

<table>
<thead>
<tr>
<th>What to do ...</th>
<th>Next steps ...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong> On the cardiograph, verify the IP address, ensure that the correct IP address type is set (DHCP or static), and ensure the computer name is unique. See “Configuring Cardiograph Network Settings” on page 2-4.</td>
<td>If there was an error in either field, repeat steps 2 and 3. The computer name must be unique. If multiple devices have the same name, one or more devices will not be recognized on the network. If the settings were correct, proceed to step 5.</td>
</tr>
<tr>
<td><strong>5</strong> If the cardiograph connects to the server via a hub, switch, or router, disconnect it, and connect it directly to the remote server server hub.</td>
<td>Once directly connected, repeat steps 2 and 3. If the ping is successful when directly connected, the problem is most likely in the network switch or router the cardiograph was originally connected through. Contact the site’s network administrator to determine the LAN port ethernet settings (see step 6). If transmission still fails, contact the Philips Response Center or your certified dealer.</td>
</tr>
<tr>
<td><strong>6</strong> Contact the hospital network administrator to determine the LAN port Ethernet settings (speed and duplex). For proper communication, the port must be configured to one of the following three settings: – Auto Negotiate – 100 Mbps Full Duplex – 10 Mbps Half Duplex See “About Auto Negotiation” on page 2-2.</td>
<td>If ping fails with the LAN port set to any of these settings, it might be necessary to lock down the cardiograph to a specific setting combination.</td>
</tr>
</tbody>
</table>
Troubleshooting a Wireless Connection

All wireless LAN troubleshooting topics are included in this section.

**Table 8-2 Wireless LAN Troubleshooting**

<table>
<thead>
<tr>
<th>Message/Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAN/WLAN connection is not available</td>
<td>The network connection has been broken.</td>
<td>Contact your IT department.</td>
</tr>
<tr>
<td>Invalid IP Address</td>
<td>Incorrect IP address specified for the server connection.</td>
<td>1 Check the cardiograph’s server configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the server settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Contact your server administrator for information.</td>
</tr>
<tr>
<td>Invalid Subnet Mask</td>
<td>Incorrect subnet mask specified in the cardiograph’s server configuration.</td>
<td>1 Check the cardiograph’s server configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the server settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Contact your server administrator for information.</td>
</tr>
<tr>
<td>Invalid Default Gateway</td>
<td>Incorrect default gateway specified in the cardiograph’s server configuration.</td>
<td>1 Check the cardiograph’s server configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the server settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Contact your server administrator for information.</td>
</tr>
<tr>
<td>Invalid Primary WINS</td>
<td>Incorrect Primary WINS specified in the cardiograph’s server configuration.</td>
<td>1 Check the cardiograph’s server configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the server settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Contact your server administrator for information.</td>
</tr>
<tr>
<td>Invalid Primary DNS</td>
<td>Incorrect Primary DNS specified in the cardiograph’s server configuration.</td>
<td>1 Check the cardiograph’s server configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the server settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Contact your server administrator for information.</td>
</tr>
<tr>
<td>Invalid directory</td>
<td>Incorrect directory specified in the cardiograph’s server configuration.</td>
<td>1 Check the cardiograph’s server configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the server settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Contact your server administrator for information.</td>
</tr>
</tbody>
</table>
### Troubleshooting Communication Issues

General wireless connectivity issues; unpredictable connectivity

<table>
<thead>
<tr>
<th>Message/Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The wireless infrastructure is not a Cisco system, and the <strong>CCX Features</strong> setting in the Summit Client Utility (SCU) is set to <strong>Optimized</strong></td>
<td>1  Open the Summit Client Utility (SCU) and change the <strong>CCX Features</strong> setting to <strong>OFF</strong> if the wireless infrastructure is not a Cisco system. For information, see the <em>PageWriter TC Cardiograph Wireless LAN Installation Instructions</em> that came with the wireless adapter. (Does not apply to TC20.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2  Contact your system administrator for more information.</td>
<td></td>
</tr>
</tbody>
</table>
### Additional Troubleshooting Information

The following tables list communication issues you may have with TraceMaster, OrderVue, or other third party (non-Philips) ECG management system, or Archive operations.

#### TraceMaster ECG Management System Issues

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error. The lead system used to generate this ECG is not supported on the cardiograph. Please print ECG directly from TraceMaster.</td>
<td>ECG XML version is incompatible</td>
<td>Print the ECG from TraceMaster.</td>
</tr>
<tr>
<td>Error. The ECG originated from a legacy TraceMaster system and cannot be printed. Please print ECG directly from TraceMaster.</td>
<td>ECG XML version is incompatible</td>
<td>Print the ECG from TraceMaster.</td>
</tr>
<tr>
<td>The Patient ID field must be enabled in order to transfer ECGs to TraceMaster. Touch the [ON] button underneath the “Enabled” column to activate the Patient ID field.</td>
<td>You attempted to transfer an ECG without a Patient ID to TraceMaster.</td>
<td>1  Follow the on screen instructions to enter a patient ID.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Retry the transfer operation.</td>
</tr>
<tr>
<td>Required patient information is missing from the current ECG</td>
<td>You attempted to transfer an ECG without the required information to TraceMaster.</td>
<td>Enter the required information and attempt the operation again.</td>
</tr>
<tr>
<td>There are no TraceMaster connections configured for use. Please go to Setup and add a TraceMaster connection.</td>
<td>You attempted to access a TraceMaster server and no connection has been configured.</td>
<td>1  Check the cardiograph’s TraceMaster configuration settings and ensure a valid TraceMaster server is configured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Check the cardiograph’s LAN/WLAN configuration settings. Touch Setup on the main tool bar to access the TraceMaster LAN and WLAN settings.</td>
</tr>
<tr>
<td>Message</td>
<td>Possible Cause &amp; Investigation Step</td>
<td>Possible Solutions</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>There is no TraceMaster server selected as the default configuration.</td>
<td>You did not configure a default TraceMaster server.</td>
<td>1. Check the cardiograph’s TraceMaster configuration settings and ensure a valid TraceMaster server is configured as the default TraceMaster server.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Check the cardiograph’s LAN/WLAN configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the TraceMaster LAN and WLAN settings.</td>
</tr>
<tr>
<td>Invalid transfer destination is selected</td>
<td>You selected an invalid TraceMaster server.</td>
<td>1. Check the cardiograph’s TraceMaster configuration.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Check the cardiograph’s LAN/WLAN settings. Touch <strong>Setup</strong> on the main tool bar to access the TraceMaster LAN and WLAN settings.</td>
</tr>
<tr>
<td>The XML version associated with this ECG is not supported by TraceMaster</td>
<td>ECG XML version is incompatible</td>
<td>1. Check the cardiograph’s TraceMaster configuration settings and ensure the correct TraceMaster server version is selected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Check the cardiograph’s LAN/WLAN configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the TraceMaster LAN and WLAN settings.</td>
</tr>
<tr>
<td>There is no TraceMaster server to delete</td>
<td>You attempted to delete a TraceMaster server without first selecting one.</td>
<td>1. Select the TraceMaster server to delete.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Delete the TraceMaster server.</td>
</tr>
<tr>
<td>Missing network settings information. Please enter correct and complete</td>
<td>You attempted to configure a TraceMaster without specifying all of the correct information.</td>
<td>1. Check the cardiograph’s TraceMaster configuration settings and ensure that all of the necessary information has been entered.</td>
</tr>
<tr>
<td>network settings.</td>
<td></td>
<td>2. Check the cardiograph’s LAN/WLAN configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the TraceMaster LAN and WLAN settings.</td>
</tr>
</tbody>
</table>
### OrderVue Issues

#### Table 8-4 OrderVue Troubleshooting Issues

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command cannot be completed</td>
<td>The server is busy.</td>
<td>Retry operation. Transfer operations use network and server resource, which may occasionally be unable to service the requests.</td>
</tr>
<tr>
<td>Command canceled</td>
<td>You canceled the action or specified invalid information.</td>
<td>Check the information specified and try again.</td>
</tr>
<tr>
<td>Internal error</td>
<td>The orders or patient demographics list does not refresh.</td>
<td>Retry the operation.</td>
</tr>
<tr>
<td>There is not enough internal storage available to save new orders</td>
<td>Application limitation</td>
<td>Delete unwanted orders.</td>
</tr>
<tr>
<td>There is not enough internal storage available to download new orders</td>
<td>Application limitation</td>
<td>Delete unwanted orders.</td>
</tr>
<tr>
<td>Not all orders can be downloaded because the Worklist is full</td>
<td>Application limitation</td>
<td>Delete unwanted orders.</td>
</tr>
<tr>
<td>Orders cannot be downloaded because they have been previously archived with ECGs. Please check ECGs saved to the Main Archive.</td>
<td>Order or patient demographics specified for download are already associated with an ECG that is currently saved to the cardiograph internal Main Archive.</td>
<td>Transmit completed ECGs to the TraceMaster server, or check the order or patient demographic is not a duplicate.</td>
</tr>
<tr>
<td>Invalid default TraceMaster connection for selected OrderVue inbox. Please select the correct TraceMaster connection for the inbox.</td>
<td>Incorrect server specified in the configuration.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Check the cardiograph’s server configuration settings.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Check the cardiograph’s LAN/WLAN configuration settings. Touch <strong>Setup</strong> on the main tool bar to access the LAN and WLAN settings.</td>
<td></td>
</tr>
</tbody>
</table>
### Troubleshooting Communication Issues

**Table 8-4 OrderVue Troubleshooting Issues**

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Error: Requested function failed</td>
<td>Order or patient demographic application error</td>
<td>1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Repeat the order or patient demographic procedure that generated the error message. If the error persists, record the date and time of the error, and export the log files. For information on using the Log Files, see the <em>PageWriter TC Cardiograph Service Manual</em>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Contact the nearest Philips Response Center or your certified dealer for assistance.</td>
</tr>
<tr>
<td>Order Error: XML error</td>
<td>XML order error</td>
<td>1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 If the error persists, export the log files. For information on using the Log Files, see the <em>PageWriter TC Cardiograph Service Manual</em>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Contact the nearest Philips Response Center or your certified dealer for assistance.</td>
</tr>
<tr>
<td>Orders number reached the limit of 200. Not all of the new orders were appended.</td>
<td>Application limitation</td>
<td>1 Delete unwanted orders or patient demographics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Refine your search criteria.</td>
</tr>
<tr>
<td>The connection to the server was reset</td>
<td>The network connection was broken during an orders or patient demographics operation.</td>
<td>1 Retry the operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Contact your IT department to report the network is down.</td>
</tr>
<tr>
<td>No order source selected</td>
<td>You attempted to get an order or patient demographic without specifying a source.</td>
<td>Specify the source and retry the operation.</td>
</tr>
<tr>
<td>Please select at least one order</td>
<td>You touched the <strong>ECG</strong> button without selecting an order or patient demographic.</td>
<td>1 Select an order.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Touch the <strong>ECG</strong> button.</td>
</tr>
<tr>
<td>Are you sure you want to delete the selected order(s)?</td>
<td>You attempted to delete an order or patient demographic.</td>
<td>Check to make sure that you want to delete the selected order or patient demographic. If so, confirm the operation. If not, cancel the operation.</td>
</tr>
</tbody>
</table>
### Table 8-4  OrderVue Troubleshooting Issues

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection exceeds maximum number of outboxes. Select no more than 24 outboxes.</td>
<td>Application limitation</td>
<td>Select fewer outboxes and retry the operation.</td>
</tr>
<tr>
<td>The Order Search Range cannot be left empty. Please enter a number between 0 and 99.</td>
<td>You attempted to search for an order or patient demographic without specifying the search range.</td>
<td>Specify a search range and retry the operation.</td>
</tr>
</tbody>
</table>

### TraceMaster Remote Query Issues

### Table 8-5  TraceMaster Remote Query Issues

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
</table>
| Remote Query could not be completed | XML application was not successfully created due to a lack of system resources. | 1  Retry the operation.  
2  Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17. |
| Remote Query get list error  | TraceMaster returned the wrong ECG list.                     | 1  Check the cardiograph’s TraceMaster configuration settings.  
2  Check the cardiograph’s LAN/WLAN configuration settings.  
3  Retry the operation. |
| Remote Query get ECG error   | TraceMaster returned the wrong ECG file.                      | 1  Check the cardiograph’s TraceMaster configuration settings.  
2  Check the cardiograph’s LAN/WLAN configuration settings.  
3  Check to see if the TraceMaster server is up and running. |
### Table 8-5  TraceMaster Remote Query Issues

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote transfer error appears</td>
<td>Unknown transfer error including no reply and unexpected reply.</td>
<td>1  Check the cardiograph’s TraceMaster configuration settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Check the cardiograph’s LAN/WLAN configuration settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3  Retry the operation.</td>
</tr>
<tr>
<td>No reply received from server</td>
<td>The LAN connection may have been disconnected during the transfer operation.</td>
<td>1  Check the LAN connection.</td>
</tr>
<tr>
<td></td>
<td>Server may be down.</td>
<td>2  Check to see if the TraceMaster server is up and running.</td>
</tr>
<tr>
<td>Unexpected reply received from server</td>
<td>Server may be down.</td>
<td>1  Check the LAN connection.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Check to see if the TraceMaster server is up and running.</td>
</tr>
<tr>
<td>Remote transfer schema error</td>
<td>The XML schema is not supported for the selected TraceMaster server.</td>
<td>Check the TraceMaster server version in the cardiograph’s TraceMaster configuration settings.</td>
</tr>
<tr>
<td>No matching ECG is found on the selected server</td>
<td>The Patient ID may be incorrect.</td>
<td>1  Check the patient ID.</td>
</tr>
<tr>
<td></td>
<td>The ECG you are looking for does not exist on the selected server.</td>
<td>2  Check to see if there is an ECG with the same patient ID.</td>
</tr>
</tbody>
</table>
## Archive Issues

### Table 8-6 Archive Troubleshooting Issues

<table>
<thead>
<tr>
<th>Message or Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command timed-out</td>
<td>The remote server is busy.</td>
<td>Retry server operation. Transfer operations use network and server resources, which may occasionally be unable to service the requests.</td>
</tr>
<tr>
<td>ECGs with incomplete required patient information fields cannot be transferred</td>
<td>The required information for the ECG has not been entered.</td>
<td>Enter the required ECG information and try the archive operation again. For more information see Chapter 3 “The Patient Session” of the PageWriter TC Cardiograph Instructions for Use.</td>
</tr>
<tr>
<td>Selected ECG(s) exceeds available space on TraceMaster Remote site</td>
<td>The server is out of available disk space.</td>
<td>Contact the system administrator and report the error.</td>
</tr>
</tbody>
</table>
| Requested Function could not be completed                                        | Network or modem phone line was interrupted during operation.                                                            | 1  Retry operation.  
2  Inspect cabling to network or analog phone line.  
3  Transfer or query operations require reliable access to the network transport. |
|                                                                                  | USB memory stick was not fully inserted into the slot on the cardiograph.                                               | 1  Verify that the USB memory stick is inserted correctly. Attempting to save ECGs to USB memory stick that is not accessible will result in an error message.  
2  Retry the operation with fully functioning USB memory stick that is fully inserted into the USB slot on the cardiograph. |
|                                                                                  | An attempt to transfer an unsupported ECG report type was made to the server.                                           | Inspect ECG that failed the requested operation for selected format (report type). Certain ECG report types are not supported by and will be rejected by the server. |
| Insufficient storage available message appears when you are attempting to transfer files to the USB memory stick. | There is not enough space on the USB memory stick.                                                                     | 1  Check the USB memory stick storage capacity.  
2  Free up space on the USB memory stick by deleting files and retry the operation. |
## Troubleshooting Communication Issues

### Table 8-6 Archive Troubleshooting Issues (continued)

<table>
<thead>
<tr>
<th>Message or Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid database message</td>
<td>Archive database may be corrupted.</td>
<td>1  Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Wait 2 minutes and perform full software installation. For information on installing cardiograph software, see the <em>PageWriter TC Cardiograph Service Manual</em>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3  Contact the nearest Philips Response Center or your certified dealer for assistance.</td>
</tr>
<tr>
<td>When an error occurs during transfer of multiple ECGs to a server, the transfer process does not continue and transferred files are not deleted.</td>
<td>Application limitation</td>
<td>The PageWriter TC cardiograph ECG transfer operations fail in a known safe manner when multiple ECG transfer operations are interrupted. Retry the transfer for the remaining ECGs.</td>
</tr>
<tr>
<td>After pressing the <strong>Archive</strong> button, it takes longer than 40 seconds before the Archive list is displayed when the Main Archive has more than 130 ECGs stored.</td>
<td>System slow-down from full ECG database</td>
<td>Save or delete ECGs from the Main Archive. There is a known system performance impact when the near maximum number of ECGs have been stored in the Main Archive.</td>
</tr>
</tbody>
</table>
| Transfer of ECGs to a USB memory stick fails and there are still less than 200 ECGs on the removable media device. | • USB memory stick file system limitation  
• Not enough free space available on the USB memory stick to save the number of selected ECGs | Delete unwanted files from the USB memory stick. |
| No reply received from TraceMaster Remote site | • The server is unavailable  
• Configuration error | 1  Contact the server administrator and report the error.  
2  Check the IP address and the server URL in the configuration settings. |
Table 8-6  Archive Troubleshooting Issues *(continued)*

<table>
<thead>
<tr>
<th>Message or Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Archive function could not be completed. Please restart cardiograph and try again. | Archive error | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 For information on using the Log Files, see the *PageWriter TC Cardiograph Service Manual*.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
| Archive process was terminated due to an error | Archive error | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 For information on using the Log Files, see the *PageWriter TC Cardiograph Service Manual*.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
| Bad reply received from TraceMaster Remote site | Archive error, bad reply from server | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 Contact the server administrator and report the error. |
| Unexpected reply received from TraceMaster Remote Site | Archive error, unexpected reply from server | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 Contact the server administrator and report the error. |
| Invalid XML schema version | Archive error, unsupported XML schema | ▶ Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17. |
### Table 8-6  Archive Troubleshooting Issues (continued)

<table>
<thead>
<tr>
<th>Message or Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Unsupported XML version | XML schema of selected ECG is not supported by the server. | 1 Check the server configuration settings screens to ensure that the correct TraceMaster server version or correct XML version is selected.  
2 Check that the selected algorithm version is supported by the selected TraceMasterVue server version or XML schema version. See Table 3-1 on page 3-3.  
3 Custom lead configurations are not supported. |
| XML error | XML ECG file corrupted | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 For information on using the Log Files, see the PageWriter TC Cardiograph Service Manual.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
| XML unicode encoding is not UTF-16 | Invalid encoding | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 For information on using the Log Files, see the PageWriter TC Cardiograph Service Manual.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
| Error accessing external XML file | File I/O error | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 For information on using the Log Files, see the PageWriter TC Cardiograph Service Manual.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
<table>
<thead>
<tr>
<th>Message or Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Error XML file is too large | File is too large | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 For information on using the Log Files, see the *PageWriter TC Cardiograph Service Manual*.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
| Error XML file did not transform | File I/O error | 1 Restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
2 For information on using the Log Files, see the *PageWriter TC Cardiograph Service Manual*.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
| Fax transmission did not complete | Fax not completed | 1 Retry the fax operation.  
2 For information on using the Log Files, see the *PageWriter TC Cardiograph Service Manual*.  
3 Contact the nearest Philips Response Center or your certified dealer for assistance. |
| There is no default TraceMaster server available for Auto Time Sync | Server settings are not configured correctly. | 1 Check the server configuration settings on the cardiograph.  
2 Touch **Setup** on the main tool bar to access the server settings screen. |
### Troubleshooting Communication Issues

#### Some ECGs retrieved from TraceMaster and printed on the cardiograph look different from TraceMaster prints or XLi printouts.

<table>
<thead>
<tr>
<th>Message or Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Some ECGs retrieved from TraceMaster and printed on the cardiograph look different from TraceMaster prints or XLi printouts. | Older or non-PageWriter TC source ECG files were retrieved. ECG was not created by a PageWriter TC cardiograph. | Inspect the printed report date and information. Retrieving and printing older ECG files that were not sourced by the PageWriter TC cardiograph can have the following differences when printed:  
  - Algorithm version appears as HPxxx on TraceMaster and PH on PageWriter TC cardiograph.  
  - Pacer tick marks are not present on PageWriter TC cardiograph printout.  
  - Frank lead system generates 3 rhythm traces with flat line and no lead label on PageWriter TC cardiograph printout.  
  - Custom lead names do not appear on PageWriter TC cardiograph printout.  
  - PageWriter TC cardiograph prints full interpretations regardless of original Xli ECG settings. |

#### Error occurred when deleting the selected ECGs. Please check the Error List below

| Error occurred when deleting the selected ECGs. Please check the Error List below | Internal Compact Flash card read/write error | 1 Retry the operation.  
2 If the problem persists, restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
3 If the issue is still not resolved, save the log files. For information on using the Log Files, see the *PageWriter TC Cardiograph Service Manual*.  
4 Contact the nearest Philips Response Center or your certified dealer for assistance. |

#### Error occurred when transferring the selected ECGs. Please check the Error List below for more details.

| Error occurred when transferring the selected ECGs. Please check the Error List below for more details. | Transmission error | 1 Retry the operation.  
2 If the problem persists, restart the cardiograph. See “Restarting the Cardiograph” on page 8-17.  
3 If the issue is still not resolved, save the log files. For information on using the Log Files, see the *PageWriter TC Cardiograph Service Manual*.  
4 Contact the nearest Philips Response Center or your certified dealer for assistance. |
Restarting the Cardiograph

To restart the cardiograph:

1. Press and hold the On/Standby button ( ) for 2-3 seconds to shut down the cardiograph.
2. Press the On/Standby button again to power on the cardiograph.
3. If steps 1 and 2 do not work, press the restart button (rear of cardiograph). See Figure 8-1 and Figure 8-2.

   After approximately 20 seconds, the PageWriter TC cardiograph software identification screen appears, followed by an audible beep.

**Figure 8-1   Pressing the Restart button on the PageWriter TC50 or PageWriter TC30 Cardiograph (apply gentle pressure only)**

<table>
<thead>
<tr>
<th>Message or Symptom</th>
<th>Possible Cause &amp; Investigation Step</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you want to overwrite the existing patient information with the selected order</td>
<td>You attempted to use an order to overwrite patient information of an archived ECG.</td>
<td>Check to make sure that you want to overwrite the information. If so, confirm the operation. If not, cancel the operation.</td>
</tr>
</tbody>
</table>

Table 8-6    Archive Troubleshooting Issues (continued)
4 If steps 1, 2, and 3 do not work, remove the batteries and the AC power from the cardiograph.

5 Reapply power and repeat steps 1 through 3.
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